

The Batrisini of Sri Lanka (Coleoptera: Staphylinidae: Pselaphinae)

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The Sri Lankan Batrisini are revised and their distribution pattern is discussed. Twelve genera and 62 species are recognized, described and illustrated. The following taxa are new: *Batrisoplatus incisivus* sp. n., *B. occipitalis* sp. n., *Batoxytomorpha femoralis* gen. n., sp. n., *Batrisiotes musardi* sp. n., *B. puncticeps* sp. n., *B. pyriformis* sp. n., *Tribasodema factiosum* sp. n., *T. tribulosum* sp. n., *Veddabatrus asper* gen. n., sp. n., *V. sexualis* sp. n., *Coryphomobatrus frater* gen. n., sp. n., *Coryphomus adventus* sp. n., *Nesiotomina appendiculata* sp. n., *N. bellax* sp. n., *N. carinifrons* sp. n., *N. difficilis* sp. n., *N. femoralis* sp. n., *N. foveifrons* sp. n., *N. perbrincki* sp. n., *N. tibialis* sp. n., *N. transjugata* sp. n., *Batrisomalus cautus* sp. n., *B. currax* sp. n., *B. foveolatus* sp. n., *B. obtectus* sp. n., *B. pubis* sp. n., *B. tuberculatus* sp. n., *Batribolbus abas* sp. n., *B. aemulus* sp. n., *B. carinatus* sp. n., *B. furcipes* sp. n., *B. gracilipes* sp. n., *B. hystrix* sp. n., *B. incurvus* sp. n., *B. mussardi* sp. n., *B. onustus* sp. n., *B. pertubator* sp. n., *B. punctatus* sp. n., *B. trebax* sp. n., *Batrisiella aulica* sp. n., *B. dryas* sp. n., *B. favea* sp. n., *B. illicebrosa* sp. n., *B. retusa* sp. n., *B. sri-lankana* sp. n., and *Baceysus pretiosus* gen. n., sp. n. *Cratnodes* Jeannel is placed in the synonymy of *Batrisomalus* Raffray; *Coryphomodes temporalis* Jeannel is transferred to *Veddabatrus*. Keys are provided for genera and species.

Key-words: Coleoptera-Staphylinidae-Pselaphinae-systematics-Sri Lanka.

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INTRODUCTION

Sri Lanka is an island of almost 65.600 square kilometres with a complex relief. The great diversity on the island was probably generated by the complex physical conditions and rainfall patterns. The island had an important position in the trade routes and in the economy of the British Empire. It was visited by numerous entomologists and its insect fauna was treated in the monographic series "Fauna of British India". As the country benefits from a good road and accommodation infrastructure, its major ecosystems and habitats types were readily accessible. The early entomological fieldwork was comparatively facile, in the noteworthy absence of administrative restrictions, which today form a worldwide net preventing potential research and increase of knowledge of the local biodiversity but not degradation of endangered habitats. In spite of the favorable conditions encountered by earlier entomologists, the beetles of Sri Lanka remained inadequately known. The first samples of forest floor litter in Sri Lanka made by the senior author in January 1970 contained many unknown taxa of Scydmaenidae, Euaesthetinae, Scaphisomatini, Cyathigerini, Tenebrionidae and Alticinae, some of them common and characteristic elements of the local fauna (e.g., members of *Euconnus* Thomson, *Baeocera* Erichson, *Edaphus* Motschulsky, and *Clavicornaltica* Scherer).

Since the 1960, large collections of beetles from Sri Lanka became available for study. Most of them are from the 1962 expedition of the Lund University, the 1970 expedition of the Muséum d'histoire naturelle in Geneva, and the long-term Smithsonian Ceylonese Insect Project. A large number of beetle taxa from the first two expeditions were already treated, primarily in the *Supplementa of Entomologica Scandinavica*, in the *Revue suisse de Zoologie* and in the *Mitteilungen der Schweizerischen Entomologischen Gesellschaft*, but comparatively little was published on staphylinids.

Hammond (1975) discussed the historical aspects of research on Ceylonese staphylinids and revised the Oxytelini of Ceylon. He saw records of 387 species, not including the Pselaphinae and Scaphidiinae, which were at that time separated from staphylinids and classified as distinct families, and estimated the total number of species of Staphylinidae occurring in Sri Lanka to be likely less than 700. Subsequently, significant additions to the knowledge of the Staphylinidae of Sri Lanka were provided only by Comellini (1977) and Puthz (1976, 1978) for the Euaesthetinae, and Puthz (1990) for the Megalopiinae. The Scaphidiinae were studied by Löbl (1971), who recognised 44 species among 867 specimens examined. As for the

Pselaphinae, Jeannel (1961) gave the last and most complete account of the group. He reported 49 species from Sri Lanka, including several not seen by him, among some 120 specimens. Bythinoplectini is the only pselaphine group of Sri Lanka studied after Jeannel's work (Coulon, 1989). Consequently, the Pselaphinae, that are with about 8.600 described species a major group, appear just slightly more species-rich in Sri Lanka than the Scaphidiinae with some 1400 species known world-wide.

About one third (16 species, 56 specimens) of the species reported from Sri Lanka by Jeannel (1961) are Batrisini, the subject of the present study. A collection of almost one thousand specimens of pselaphines from Sri Lanka put together in 1964 and 1965 by the late Robert Mussard (Geneva) and donated to the Geneva Museum, includes many Batrisini obviously unknown to Jeannel. The senior author began to study this material in 1969 but for various reasons completed the work only recently, in collaboration with the junior author.

MATERIAL AND METHODS

For the present study we have examined 2851 specimens of Batrisini from Sri Lanka. They belong to 62 species in 12 genera. Since the previous descriptions are inadequate, we give new descriptions and illustrations for all taxa encountered in Sri Lanka. In addition to the material from the Muséum d'histoire naturelle, Geneva (MHNG), type material and collections from the following institutions were examined:

MNHN: Muséum National d'Histoire Naturelle, Paris

MZLU: Museum of Zoology, Lund University, Lund

MRAC: Musée royal de l'Afrique centrale, Tervuren

NHML: The Natural History Museum, London

NMCC: The National Museum, Colombo

NMNH: National Museum of Natural History, Washington

ZMUM: Zoological Museum of Moscow State University, Moscow

ZSMC: Zoologische Staatssammlungen, München

Material deposited in the private collection of the junior author is indicated by the acronym PCSK. The junior author examined also specimens deposited in the private collection of P. Hlaváč, Ružomberok (PCPH).

The length and width of body parts are measured at their longest and widest distances. The head length is measured from clypeal margin to anterior margin of neck. The abdominal segments are counted from the first exposed segment on wards, i.e., from the third morphological tergite and sternite, respectively. The state of the metathoracic wings was not checked consistently and is only referred to when the wings are found reduced. Illustrations of the palpi, antennae, legs and aedeagi were made from specimens dissected and mounted in Canada balsam on acetat slides. The foveal pattern was examined in dissected specimens of one to four species of each genus, except for *Baceysus* gen. n. and *Batoxylomorpha* gen. n., of which only one specimen is available. All taxa examined have similar patterns of prosternal foveae and most have similar mesosternal foveae: the lateral prosternal foveae are distant; the median mesosternal foveae are not fused; the lateral mesosternal foveae are biforked

and have the anterior forks smaller than the posterior forks. The pattern of meso-sternal foveae is mentioned only if different from above.

Designation of lectotypes in old syntypes series was not considered necessary for the purpose of stability of names. The label data of old type material are reproduced unmodified, whereas those of other material are given modified as follows: Ceylon, the official name of the country until 1972, is replaced by Sri Lanka, the province name is given with the first respective locality and not repeated for other localities from the same province, and the initials of the first name of the collector are consistently added if lacking on labels. Information on habitats for material from the Geneva expedition is given according to an unpublished list of localities.

The provinces of Sri Lanka are shown in Fig. 1. For basic information on geology, climate and habitats of Sri Lanka see Brinck *et al.*, 1971.

The material coming from the 1962 expedition of the Lund University (participants: P. Brinck, H. Andersson and L. Cederholm) is indicated by the acronym "ExpL", that from the 1970 and 1972 expeditions of the Geneva Muséum d'histoire naturelle (participants: R. Mussard, C. Besuchet and I. Löbl) by the acronym "ExpG".

RESULTS AND DISCUSSION

DISTRIBUTION PATTERNS, AREAS OF ENDEMISM AND DIVERSITY

Sri Lanka is a continental island which was linked to India several times in the past, the last connection existed at the end of the Pleistocene. The 50 km separating the island are interspaced with shoals known as the Adams Bridge. Considering the past connections, Sri Lanka and India are expected to possess similar faunas (Darlington, 1957). Nevertheless Jeannel (1961) considered the pselaphines of Sri Lanka "essentially Malaysian, well different from those of India". The major problem in treating this kind of questions is the inadequate knowledge of the tropical pselaphines, those of India in particular. As far as the Sri Lankan Batrisini are concerned, all of the 62 species listed appear to be endemic, and five of the twelve genera are only known from Sri Lanka. Only four genera, *Nesiotomina* Jeannel, *Batrisomalus* Raffray, *Veddabatrus* gen. n. and *Batrisiella* Raffray, are known from both countries, Sri Lanka and India. Surprising is the obvious absence of *Mnia* Newton & Chandler, *Cratna* Raffray and *Sathytes* Westwood. These three genera are species-rich and widely distributed in Southeast Asia. *Mnia* occurs in various forest habitats and is common in the forest floor litter in southern India (Löbl, pers. obs.). *Batrisiella* Raffray is the only widely distributed Oriental Batrisini genus with members in Sri Lanka, and *Batrisoplatus* Raffray and *Baceysus* gen. n. are the only groups indicating close Sri Lankan - Malaysian relationships. Like the Pauropoda (Scheller, 1970), Batrisini show distinct connections to the Afrotropical fauna. *Coryphomus* Jeannel and *Batrisiotes* Jeannel were known so far only from tropical Africa. The former genus is represented in Sri Lanka by a single species, the latter by three species. Hence, the present data indicate complex and poorly understood origin of the Sri Lankan Batrisini.

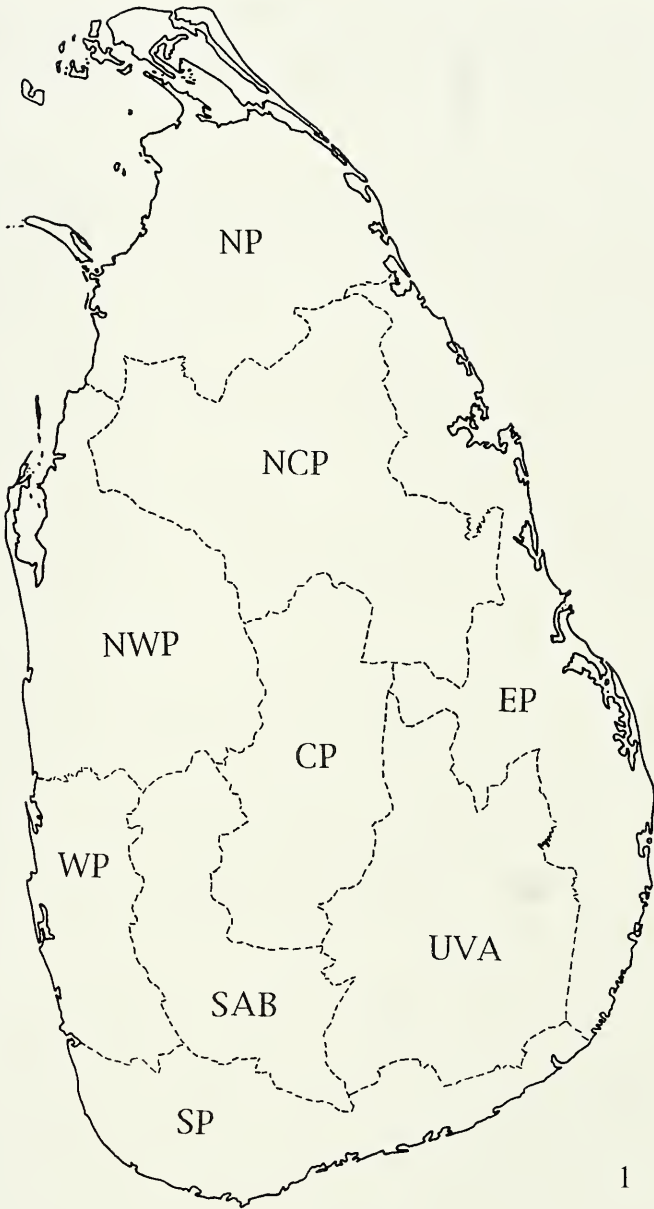


FIG. 1

Sri Lanka, with Provinces. NP = Northern Province; NCP = North Central Province; NWP = North Western Province; EP = Eastern Province; CP = Central Province; UVA = Province of Uva; WP = Western Province; SAB = Province of Sabaragamuwa; SP = Southern Province.

The Central Highlands of Sri Lanka are well known for their large number of narrow endemic Staphyliniinae (see, Hammond, 1975; Puthz, 1971; Szymczakowski, 1972). Most of these species occur above 1500m in the montane wet forest ecosystem, less in the sub-montane wet evergreen forests from 900 to 1500m. Among the Batrisini, some species of *Batrisomalus* Raffray and most of *Nesiotomina* Jeannel probably belong to this category. Eleven species appear to be exclusive to the montane zone (*Tribasodema armatum* (Raffray), *Nesiotomina transjugata* sp. n., *Batrisiella caviventris* (Raffray) and most of the members of *Batrisomalus* Raffray). Ten species are known only from the sub-montane zone (*Batoxylomorpha femoralis* gen. n., sp. n., *Coryphomobatrus frater* gen. n., sp. n., most species of *Nesiotomina*, *Batrisiella remyi* Jeannel and *B. retusa* sp. n.). Only one, *Batribolbus dentipes* (Raffray), was found in the sub-montane and montane zones. Nine species appear to be exclusive to the lowland wet evergreen forest ecosystem (*Veddabatrus asper* gen. n., sp. n., *Nesiotomina femoralis* sp. n., several species of *Batribolbus* and *Batrisiella lewisi* Jeannel). Only two species are exclusively from the dry Chloroxylon and Manilkara zones (*Batrisiella saucia* (Raffray) and *Veddabatrus sexualis* gen. n., sp.n.). *Coryphomus adventus* sp. n. is the sole Batrisini from rotten coconut trunks near sea shore. Most species that occur in the dry zones were also found in the intermediate and in the wet lowland zones, or are known from the wet and the sub-montane zones. *Batrisiella puberula* Jeannel is found in dry and wet lowland zones, and in the sub-montane zone.

Pselaphinae are found usually in the same or in similar habitats as Scydmaenidae. Members of both groups are mostly hygrophilous predators of micro-arthropods, with their highest diversity in the subtropics and tropics. The Pselaphinae are generally significantly more species-rich than the Scydmaenidae. A noteworthy exception from this rule appears to be found in Sri Lanka, from where 201 species of Scydmaenidae were described (Besuchet, 1971; Franz, 1971, 1982), to which a number of unstudied species of Cephenniini may be eventually added. As an explication for the diversity of the Sri Lankan scydmaenids Franz (1982) suggested a high mutation rate induced by natural radioactivity. As far as we know, his opinion was not corroborated by later studies.

With the present study the number of Batrisini species known from Sri Lanka raises almost four times. Nevertheless it is difficult to extrapolate the present data and estimate the real diversity of the group. The fact that 13 of 62 species are represented by a single specimen, and that two of them are from old collections, indicate insufficient field work. The main sources of the new material are sifting of moist tree and shrub litter on the forest floor, collecting by means of an aspirator on sandy stream banks, and light traps. Window traps and flight intercept traps have not been used in Sri Lanka to collect pselaphines and beating/sweeping of the vegetation was apparently carried out sporadically. Obviously little attention was paid to sample the edaphic fauna and arthropods associated with moss growing on stems in montane habitats. Hence, significantly higher number of species of Batrisini may be expected to occur in Sri Lanka. A likely realistic estimation of the number of Sri Lankan pselaphines would be between 200 and 250 species. Worldwide the Pselaphinae represent

about 20% of all Staphylinidae (Newton, 1990). It appears that Hammond (1975) under-estimated the number of species inhabiting Sri Lanka, or that some of the major and poorly studied groups, such as Paederinae and Aleocharinae, are depauperized there.

SYSTEMATICS

The former Batrisinae were downgraded to supertribe rank (Batrisitae) as a consequence of the reduction of the pselaphids to the level of a subfamily of staphylinids (Newton & Thayer, 1995). This action preserved the internal organisation of the group. The Batrisitae were until present subdivided in to three tribes. The Amauropini, with 12 genera, are distributed in the Mediterranean and eastern Nearctic region. The Batrisini are diverse and almost world-wide (not in New Zealand). The Metopiasini including six Neotropical genera were transferred to Euplectitae (Chandler, 2001). The Amauropini are certainly ill-based. The characters used to define the Amauropini (Jeannel, 1948; 1950) are either restricted to some of its members and may vary within a single species (the presence of spines instead eyes), or are adaptations to subterranean habitats as the depigmented cuticle and the reduction of eyes in many but not all members, or are divers homoplasies that may be found in a variety of other Batrisini. Among Jeannel's characters of the Amauropini, the abdominal ones may be highly variable within closely related species (see Leleup, 1970) and are found in a large number of other distinctive Batrisitae. Besuchet (1986) stated that *Protamaurops* Müller is intermediate between "*Amaurops* s.l." and "*Batrisodes* s.l." and doubted the validity of Amauropini. Later, Besuchet (1999) synonymized implicitly, but not explicitly, these two tribal names in placing *Paramaurops* Jeannel in the Batrisini.

Four subtribes were established within the Batrisini: the Ambicocerina with four Afrotropical genera, the cosmopolitan Batrisina (including the former Trabisina) with 199 genera [Newton & Chandler (1989), to which at least *Batrisopsis* Raffray and *Trisinus* Raffray from the Batrisini genera incertae sedis should be added (Löbl, pers. observation)], the Leupeliina with a single Afrotropical species, and the Stili-palpina with four Afrotropical genera. Leleup (1976, 1981) discussed the characters of the Afrotropical subtribes and demonstrated the weakness of their taxonomic status. As the Amauropini, obviously also the Ambicocerina, Leupeliina and Stili-palpina are ill-based. In the absence of an adequate revision of the huge and morphologically (and ecologically) very diverse Batrisini, we refrain from placing the other tribal and subtribal names in synonymy. As the Metopiasini are excluded (and not known from the Old World), the taxa of Batrisitae are treated in the present paper as Batrisini, without considering the subtribes.

Jeannel (e.g., 1959; 1960a; 1961) subdivided the Batrisina in to five groups. He based his classification primarily on the position of the eyes, the presence or absence of a pair of lateral pronotal sulci and the presence of either two or three basal foveae on each elytron. Only the members of one of these groups, the "division V", appear to be linked by a synapomorphy. They possess a highly derived aedeagus with a strongly sclerotized, articulated, dorsal lobe. Among the Batrisini of Sri Lanka,

Batrisiella Raffray may be placed in Jeannel's "division V", which was referred to as the *Batrisocenus* complex by Nomura (1991). *Batrisoplatus* Raffray is certainly not closely related to members of the *Batrisocenus* complex but the aedeagi in the former genus are similar to those of the latter group. Similarly, *Baceysus* gen. n. has a strongly reduced, plate-like aedeagus, resembling the aedeagi of *Batrisodes* Reitter, *Sathytes* Westwood, or *Mnia* Newton & Chandler, but strongly differs in external characters from these genera. Obviously, the aedeagal characters may indicate relationships in some species groups as they may be homoplasious in other groups. As for the other characters of Jeannel's divisions, it is difficult to define from which size onwards the eyes or tempora are large, and hazardous to place species with an aberrant number of pronotal sulci (varying from zero to seven) or elytral foveae (varying from zero to four) in any division. The number of two or three foveae at the elytral basis is usually a reliable group characters, but may not work a priori as such (see *Batrisomalus* Raffray, *Syrbatus* Reitter). Hence, as for the subdivision of the Batrisini in to subtribes, we can neither use the Jeannel's subdivisions of the Batrisina.

The a priori high weighing of the state of the lateral carinae of the first abdominal tergite led to a paraphyletic grouping of the Batrisini genera (see Raffray, 1904; 1908; Jeannel, 1959) and the high weighing of the form and location of the male secondary characters led to multiplication of poorly defined genera (e.g., Jeannel, 1952; 1957; 1958). In fact, the secondary sexual characters may be expressed on any part of the exoskeleton of Batrisini. Males of a large number of species possess a deep excavation bearing more or less complex structures such as small notches, tubercles, carinae, sulci and patches of modified setae. Such structures are usually located on the abdominal tergites or on the head, rarely on the prothorax or elytra. *Cratna* Raffray, which monophyly is strongly supported (Löbl, 1986; Nomura, 1991), may demonstrate their unreliability as group characters in Batrisini. Males of most species of *Cratna* (13 described, about 20 additional ones in the collections of MHNG and PCSK) possess a complex abdominal excavation. *Cratna abdominalis* Löbl, however, has the first tergite only slightly impressed, lacking any particular features, and *C. torticornis* Raffray has sexually modified antennae and unmodified abdomen. Males of two of the undescribed species of *Cratna* have modified frons, but unmodified abdominal tergites and antennae. Most species of *Batrisiella* from Sri Lanka have quite similar male abdominal characters as *Cratna*, except for *Batrisiella puberula* Jeannel which possesses unmodified abdominal tergites but strongly modified metatibiae. In analogy, males of *Batribolbus* have the metasternum usually strongly modified, but in *B. furcipes* sp. n. the "metasternal" structure is translocated on to the first abdominal sternite. The male secondary sexual characters are, along with the aedeagal characters, most useful for the distinction of species. They may indicate relationships but we prefer not to base on them the definitions of taxa of higher rank than species. It is out of the scope of the present study to analyse the relationships within the Batrisini. Such work would require to study members of almost all described genera, because their potentially important characters (e. g., the presence of frontal foveae, the shape of the metasternal intercoxal processes, the pattern of the abdominal foveae, the presence of sulci and carinae on abdominal sternites) were usually not quoted by authors prior to Nomura (1991).

KEY TO THE GENERA OF BATRISINI OF SRI LANKA

- 1 Head and pronotum lacking sulci, pronotum evenly convex 2
- Head and pronotum with sulci 3
- 2 Pronotum without tubercles or denticles. Elytra each with four basal foveae. Elytra and abdomen bearing trichomes. Antennal segments 2 to 8 much wider than long. Eyes large, occupying most of lateral head surface *Baceysus* gen. n.
- Pronotum with two antebasal tubercles. Elytra each with three basal foveae. Elytra and abdomen lacking trichomes. Antennal segments 2 to 8 elongate. Eyes small, occupying centre of lateral head surface *Batoxylomorpha* gen. n.
- 3 Elytra with sutural striae widened posteriorly. Pronotum lacking antebasal sulcus, discal tubercles and denticles. Elytra each with two basal foveae *Batrisiotes* Jeannel
- Elytra with sutural striae throughout very narrow 4
- 4 Pronotum without antebasal sulcus, with denticulate lateral margin. Head gradually, strongly narrowed anteriorly. Elytra each with three basal foveae. Body comparatively flat, pronotum, elytra and abdomen in about same plane *Batrisoplatus* Raffray
- Pronotum with antebasal sulcus, with or without marginal denticles. Head not or slightly narrowed anteriorly. Elytra each with two or three basal foveae. Body usually convex, elytra raised above plane of pronotum and abdomen 5
- 5 Vertex lacking semicircular sulcus or oblique sulci, vertexal foveae isolated. Pronotum lacking denticles, thorns or tubercles. Elytra each with two basal foveae *Batrisiella* Raffray
- Vertex with semicircular or oblique sulci joined to foveae 6
- 6 Vertexal sulci not joined on frontoclypeus. Pronotum lacking carinae, thorns, tubercles or denticles, with three longitudinal, discal sulci. Elytra with two basal foveae. Antennal foveae distinct ... *Batribolbus* Raffray
- Pronotum with carinae and/or thorns, tubercles or denticles. Elytra each with two or three basal foveae 7
- 7 Pronotum with five dorsal and four lateral longitudinal sulci, and two pairs of antebasal thorns, discal carinae absent. Elytra each with three basal foveae *Nesiotomina* Jeannel
- Pronotum usually with three discal longitudinal sulci, and with two, or lacking lateral longitudinal sulci. If two additional sulci present on pronotal disc, pronotum with one pair of antebasal and one pair of discal thorns 8
- 8 Pronotum and elytra flattened. Pronotum with two longitudinal discal carinae, lacking denticles and thorns. Vertexal sulci converging anteriorly or obsolete. Elytra with two or three basal foveae . *Batrisomalus* Raffray
- Pronotum not flattened, without longitudinal discal carinae, or with such carinae and with denticles or thorns. Vertex with semicircular sulcus. Elytra with three basal foveae 9

- 9 Pronotum with one pair of marginal denticles, lacking discal carinae, denticles and thorns *Coryphomus* Jeannel
 - Pronotum lacking marginal denticles, with discal thorns and/or denticles . . . 10
 10 Pronotum with pair of antebasal and pair of discal thorns, and short sulci between antebasal and discal thorns, lacking discal carinae *Tribasodema* Jeannel
 - Pronotum with discal carinae bearing thorns or denticles, lacking sulci anterior to antebasal thorns 11
 11 Abdominal tergite 1 longer than tergite 4, tergite 4 short, not expanded. Elytra with subhumeral foveae *Veddabatrus* gen. n.
 - Abdominal tergite 1 shorter than tergite 4, tergite 4 long, strongly expanded. Elytra lacking subhumeral foveae *Coryphomobatrus* gen. n.

***Batrisoplatus* Raffray**

Fig. 2

Batrisoplatus Raffray, 1894b: 226; type species *Batrisoplatus rugulosus* Raffray, 1894.

Description. Habitus as Fig. 2. Length 1.6-2.0 mm. Body with dorsal side fairly flat. Vertex, pronotum, elytra and abdomen almost in same plan. Punctuation dense. Pubescence short, recumbent or semi-erect on dorsal side of body, without particular, long macrosetae. Pubescence on ventral side of body and on legs very short, recumbent.

Head trapezoid, wider than long, narrower than pronotum. Vertex flattened or convex. Frontal lobe in plan with vertex or inclined, not impressed, with anterior margin angular. Antennal fossae close, frontoclypeus very narrow, overlapped by anterior part of frontal lobe and not visible in dorsal view. Antennal tubercles and lateral frontal foveae absent. Vertexal foveae in impressions. Semicircular sulcus with arms short, strongly converging anteriorly. Anterior, transverse section of sulcus delimited by carina extending anteriolaterally to reach lateral head margins above antennal insertions. Ocular-mandibular carinae touching and arcuate along eye margins. Occipital part of vertex abruptly truncate, with posterior wall perpendicular or strongly overhanging, overlapping anterior part of neck. Eyes large, notched posteriorly, multifaceted, facets large. Eye centres about at or posterior to head mid-length. Tempora short. Ventral side of head very short, swollen transversally, strongly inclined toward neck. Gular foveae close, in common impression.

Antennae short. Scape cylindrical, with apical angles blunt, lacking modified setae or glandular orifices. Antennal segments 2 to 11 symmetrical. Pedicel as long as wide, much shorter and narrower than scape. Segments 3 to 10 wider than long, about as broad as but shorter than pedicel. Club formed by apical three segments. Maxillary palpi short, segment 3 subcylindrical, wider than long, segment 4 with broad base.

Pronotum short, wider than long, widest posterior middle, with broadly rounded anterior angles; strongly and abruptly emarginate between basis and widest points, with small marginal denticle at widest point. Disc weakly convex to flattened, with deep median sulcus; ridges, basomedian carina and lateral sulci lacking. One pair of basolateral foveae and one pair of lateral foveae present. Lateral humps not or hardly distinguishable. Prohypomeron smooth, paranotal ridge entire, sinuate in lateral view.

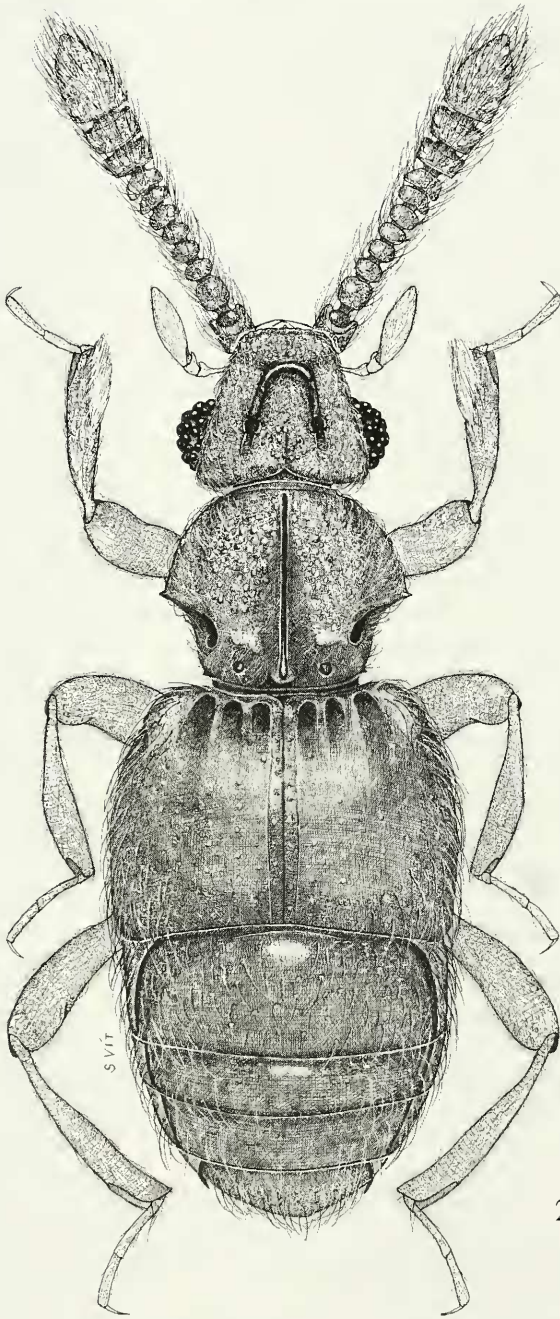


FIG. 2
Batrisoplatys incisivus sp. n.

Elytra short and broad, much shorter than abdomen, each with deep sutural stria, three basal foveae, one subhumeral fovea and lateral carina; basal ridge and discal striae absent. Base not raised to form ridge.

Metasternum strongly swollen, partly impunctate, with deep mesal sulcus. Anterior intercoxal process small, delimited by deep, mesal impression. Lateral metasternal foveae very close, lying in mesal impression close to intercoxal process, almost touching mesal axis of metasternum. Posterior intercoxal process narrow, prominent, with elongate notch to receive mediobasal abdominal process.

Legs fairly short and robust. Femora flattened, not or slightly curved, weakly narrowed basally, not narrowed apically. Tarsi slender, with segment 3 longer than segment 2.

Abdomen with 5 tergites exposed in dorsal view. Tergites 1 to 3 impressed basally; tergites 1 to 4 with large basolateral fovea and one pair of lateral carinae at each side. Tergite 1 raised apically, longer than tergite 2, shorter than tergites 2 and 3 combined; tergites 2 and 3 large, equally long, horizontal in mid-line, tergite 4 longer than tergite 3, inclined; tergite 5 with narrow horizontal basal area separated by transverse ridge from larger and vertical apical area. Base of sternites 1 to 4 impressed, each with two pairs of foveae, basolateral fold bearing long setae.

Secondary sexual characters. Eyes larger in males than in females. Apical margin of sternite 5 emarginate in male, arcuate in female. Legs and antennae without obvious sexual characters. Aedeagus with median lobe comparatively flat, with ventral process laminar, dorsal process prominent to form one or two apophysis, and with arcuate, slender, internal apophysis; setiform sensilla absent.

Distribution. Penang (West Malaysia), with one species, and Sri Lanka. Two additional, undescribed species from Singapore and continental West Malaysia are represented in the collection of MHNG, and further two from China are in the PCSK.

Habitat. The specimens from the Geneva expedition were found in moist, sifted vegetation litter, at forest edges or in forest.

KEY TO THE SPECIES OF *BATRISOPLATUS*

- 1 Vertex raised, overlapping neck, lacking medio-apical notch. Frons sharply delimited posteriorly and anteriorly by carinae and obliquely inclined. Pronotum lacking antebasal tubercles. 2
- Vertex flattened, deeply notched above neck. Frons not throughout well delimited from vertex and about in same plan as vertex, lacking translucent, postantennal fields. Pronotum with low antebasal tubercles. Punctuation on elytra and abdomen granulate *B. incisivus* sp. n.
- 2 Head and pronotum conspicuously wide, head about 1.5 times as wide as long. Frons with pair of translucent postantennal fields. Punctuation on elytra and abdomen not granulate *B. occipitalis* sp. n.
- Head and pronotum moderately wide, head hardly 1.3 times as wide as long. Frons lacking translucent postantennal fields. Punctuation on elytra and abdomen granulate (West Malaysia) *B. rugulosus* Raffray

***Batrisoplatus incisivus* sp. n.**

Figs 2, 3

Holotype ♂: SRI LANKA: CENTRAL PROV.: Kandy, ca 600m, Udawattekele Sanctuary, 22.I.70, forest edge, ExpG # 18 (MHNG).

Paratypes: SRI LANKA: CENTRAL PROV.: Kandy, 26.I.64, R. Mussard, 1 ♂, 2 ♀ (MHNG); Dambulla, 17.I.70, ExpG # 5, forest edge, 1 ♀ (MHNG); NORTH CENTRAL PROV.: Anuradhapura, 150m, 23.I.65, R. Mussard, 1 ♀ (MHNG); Polonnaruwa, 150m, 13.I.65, R. Mussard, 1 ♀ (MHNG); UVA PROV.: Inginiyagala, 12.II.70, ExpG # 63, 1 ♂ (MHNG); EASTERN PROV.: Periyapullumalai near Pulaveli, 11.II.70, ExpG # 61, 2 ♀ (MHNG, PCSK); CEYLON, Coll. Cl. Müller, 1 ♀ (ZSMC).

Description. Length 1.60-1.75 mm. Head moderately large, not quite 1.4 times as wide as long. Vertex moderately raised medially, with punctation very dense and coarse, partly confluent, more dense on sides than on median portion. Intervals between punctures much smaller than puncture diameters, mostly formed by puncture margins. Vertexal sulcus semicircular, sharply delimited anteriorly. Frontal area anterior to sulcus almost in same plan as vertex, not delimited. Vertexal foveae in small, deep impressions, joined to sulcus. Posterior margin of vertex deeply notched in middle. Vertexal notch touching low median carina, latter slightly longer than notch and reaching anteriorly almost to line of posterior margin of vertexal foveae. Neck with low median carina. Pronotum 0.32-0.37 mm long, 0.40-0.45 mm wide, with pair of low, acute, antebasal tubercles. Median sulcus deep, starting near basal margin, almost reaching anterior margin, slightly narrowed anteriorly. Admesal area of pronotum smooth, forming shiny, triangular surface; smooth surface very wide near base, narrowed gradually toward middle third of pronotal length. Lateral humps weakly developed. Disc obliquely inclined anterior to line of antebasal tubercles, between median sulcus and lateral humps; punctation formed by large, elongate, partly confluent punctures arranged to form very short, oblique striae. Punctation on lateral humps granulate. Elytra and abdominal tergites with granulate punctation. Humeral protuberances fairly large, convex. First tergite about as long as second and third tergites combined. Tergites 1 to 3 with inner marginal carinae almost reaching apical margin, outer marginal carinae shorter.

Male characters. Eyes very large, strongly prominent, about as long as half of head length in dorsal view. Aedeagus (Fig. 3) with median lobe narrowed apically to form hook-like process and bearing broad subapical lamina.

Female characters. Eyes moderately large and prominent, about as long as one third of head length.

Comments. This species is easily distinguished from its congeners by the shape of the frons and the pronotum with antebasal tubercles.

***Batrisoplatus occipitalis* sp. n.**

Fig. 4

Holotype ♂: SRI LANKA: CENTRAL PROV.: Kandy, ca 600m, Udawattekele Sanctuary, 22.I.70, litter at forest edge, ExpG # 18 (MHNG).

Paratypes: SRI LANKA: CENTRAL PROV.: same data as holotype, 1 ♂, 2 ♀ (MHNG); Mululla, 600m, 4.II.70, ExpG # 45, under bark, 1 ♀ (MHNG); Kandy, 26.I.64, R. Mussard, 1 ♀ (MHNG).

Description. Length 1.8-2.0 mm. Head large, about 1.5 times as wide as long. Vertex strongly convex, with punctation very fine and very dense. Puncture intervals

larger than puncture diameters. Vertexal sulcus almost V-shaped, with arms deeply impressed, sharply delimited from outside. Vertexal foveae in large, deep impressions. Frons with pair of translucent, transverse postantennal fields. Frontal lobe inclined, forming oblique plate anterior sulcus. Posterior margin of vertex not notched. Median vertexal carina long, low, extending from occipital margin about to line of anterior margins of vertexal foveae. Neck with high median carina and two admesal sulci. Pronotum 0.38-0.40 mm long, 0.52-0.54 mm wide, lacking antebasal tubercles. Median sulcus as in *B. incisivus*. Lateral humps not distinguishable. Disc evenly inclined from median sulcus to lateral margins, with two very fine carinae starting near base at level of basal foveae, converging anteriorly, reaching anterior third of pronotal length. Punctuation very fine and very dense, distinctly less dense between discal carinae than on remainder of pronotum. Elytra and abdominal tergites without granulate punctuation, elytral punctuation much coarser and denser than that on abdomen, consisting of punctures well delimited, about as large as puncture intervals. Humeral protuberances fairly large. First abdominal tergite slightly longer than second tergite, much shorter than tergites 2 and 3 combined. Tergites 1 to 3 with inner marginal carinae reaching to or almost to apical margins, outer marginal carinae shorter.

Male characters. Eyes very large and prominent, similar as in *B. incisivus*. Aedeagus (Fig. 4) with median lobe extended apically by narrow, denticulate process and large lamina.

Female characters. Eyes smaller, as long as one third of head length.

Comments. This species shares with *B. rugulosus* the shape of the frons and posterior margin of the vertex. It may be distinguished from *B. rugulosus* by the much wider head and pronotum, the vertexal foveae lying in large impressions, the presence of translucent postantennal areas, the comparatively wider antennal segments 4 to 8, and the simple, not granulate punctuation.

***Batrisiotes* Jeannel**

Batrisiotes Jeannel, 1951a: 90; type species *Batrisiotes clavigeroides* Jeannel, 1951.

Description. Length 1.8-2 mm. Body weakly convex dorsally, with pronotum, elytra and abdomen in almost same plan. Punctuation mostly usually fine and dense.

Head trapezoid, longer than wide, eyes included. Frontal lobe flattened or slightly impressed medially, truncate in dorsal view. Frontoclypeus narrow, vertical, clypeal margin overlapped by frontal lobe in dorsal view. Antennal fossae close. Vertex raised in middle to form hump, with nude vertexal foveae joined to semicircular sulcus. Occipital margin of vertex truncate. Antennal tubercles faint. Lateral frontal foveae faint. Eyes large and prominent in male, lying in posterior half of head, deeply notched posteriorly. Tempora short and rounded. Mandibular-ocular carinae curved dorsally distant from eye margins. Ventral side of head swollen, short. Gular foveae in shallow, common impression.

Antennae moderately long, with segments 2 to 11 symmetrical. Scape subcylindrical, flattened dorsally, with posterior angles not expanded. Pedicel small,

elongate. Segments 3 to 11 fairly loose, segments 3 to 8 similar in size, club three-segmented. Maxillary palpi short, with segment 3 short, wider than long, impressed basally; segment 4 impressed and narrowed basoventrally, with short stalk.

Pronotum cordiform, about as long as wide and about as wide as head with eyes, with median sulcus, one pair of inner and one pair of outer basolateral foveae joined to lateral longitudinal sulci. Antebasal sulcus, discal tubercles and median antebasal fovea absent. Paranotal sulci distinct through their length, arcuate; surfaces smooth above and below their middle portion.

Elytra each much larger than pronotum, with lateral contours weakly arcuate, two basal foveae, entire sutural striae and lateral carinae. Subhumeral foveae lacking. Sutural striae gradually widened toward apex, forming conspicuous, smooth, impressed surfaces delimited by punctate adsutural areas and elytral disc. Base lacking ridge or fold above foveae. Posterior elytral margins bearing trichomes.

Prosternum swollen anterior intercoxal process, with two oblique sulci joined to lateral prosternal foveae. Mesosternum strongly inclined, flat. Metasternum strongly convex, with deep median impression. Lateral metasternal foveae close, situated posterior mesocoxal process, separated by narrow bridge; apical intercoxal process prominent, deeply notched.

Legs short, femora thick. Tarsi slender, segments 2 and 3 similar in length.

Abdomen long, subparallel, segments 1 to 3 almost equally wide, not or weakly narrowed apically, with 4 or 5 tergites visible in dorsal view. Tergite 1 large, not constricted basally, longer than tergite 2, eventually about as long as tergites 2 to 4 combined, inclined toward base, with outer and inner marginal carinae not or strongly modified, with or without trichomes. Tergites 1 to 4 with one pair of basolateral foveae. Tergites 2 and 3 lacking carinae or with shortened marginal carinae. Tergite 4 with basolateral digitiform tubercles. Sternite 1 not shortened mesally, with one pair of basolateral foveae. Following sternites lacking foveae.

Male secondary sexual characters located on tibiae or apparently absent; eyes larger in males than in females. Aedeagus with median lobe short and wide, flat ventral process, arcuate dorsal process and slender dorsal apophysis; setae absent.

Habitats. All specimens are from sieved leaf and other litter in lowland forests. The presence of trichomes indicate myrmecophily.

Distribution. Tropical Africa and Sri Lanka.

Comments. For general appearance of *Batrissiotus* see Leleup (1981). Three species were known hitherto: *B. clavigeroides* Jeannel, 1951 from Angola and Rep. of Congo, *B. joannae* Jeannel, 1960 from Rep. of Congo and *B. loebli* Leleup, 1981 from Ivory Coast (*B. depressicollis* Jeannel, 1956 was transferred to *Parabatrissus* Jeannel by Leleup, 1981). The Sri Lankan species differ from *B. clavigeroides* and *B. joannae* by the globose antennal segments 3 to 6 and narrower abdomen (Jeannel, 1960a), and from *B. loebli* by the pronotum having narrow median sulcus, and the complete lack of abdominal trichomes, or the abdominal trichomes present only on the basal portion of the tergite 1 (they extend in *B. loebli* along the entire inner marginal carinae of the tergite 1, as illustrated by Leleup, 1981).

KEY TO THE SPECIES OF *BATRISIOTES* OF SRI LANKA

- 1 Pronotum with median sulcus short, indicated by row of coarse punctures on discal centre, and with one pair of inner antebasal foveae. Abdominal tergite 1 with lateral marginal carinae raised to form vertical laminae bearing trichomes, and with two basolateral carinae bearing erect setae *B. mussardi* sp. n.
- Pronotum with median sulcus long, reaching close to anterior margin, with or without inner basolateral foveae. Abdominal tergite 1 with lateral marginal carinae not modified to form vertical laminae, and lacking basolateral carinae 2
- 2 Pronotum lacking inner antebasal foveae and antebasal tubercles. Abdominal tergite 1 lacking trichomes, with two deep basolateral impressions *B. pyriformis* sp. n.
- Pronotum with one pair of inner antebasal foveae and low antebasal tubercles. Abdominal tergite 1 with two basal trichomes, lacking impressions *B. puncticeps* sp. n.

Batrisiotes mussardi sp. n.

Fig. 5

Holotype ♂: SRI LANKA: CENTRAL PROV.: Dambulla, 17.I.70, ExpG # 5 forest litter (MHNG).

Paratype ♀: same data as holotype (MHNG).

Description. Length 1.80-1.85 mm. Body moderately convex. Punctuation very fine and dense, on abdomen finer than on elytra and pronotum. Pubescence short, recumbent. Head as long as wide, with eyes nearly as wide as pronotum. Vertex swollen, gradually inclined to frontal lobe. Semicircular sulcus distinct, narrow, with arms subparallel near vertexal foveae, distinctly oblique more anteriorly, with transverse section delimited by inconspicuous carina extending anteriolaterally toward point above antennal base. Frontal lobe flat, slightly inclined. Posterior margin of vertexal foveae slightly anterior to level of eye centres. Antennal segments 3 to 6 subequal in size. Pronotum 0.38 mm long, 0.41-0.43 mm broad. Discus with mesal sulcus short, narrowed anteriorly, indicated by coarse puncture row on anterior half of disc. Discal tubercles faint. Outer antebasal foveae present. Elytra with adsutural area flat and impressed. Sutural striae narrow in basal third, gradually widened toward apical margin, completely smooth, each at apical margin about as wide as combined maximal width of adsutural areas. Disc slightly swollen along sutural striae, impressed along humeral protuberances; discal striae lacking. Humeral protuberances strongly raised, elongate. Apical margins triangular, each forming acute angle and bearing loose trichome on inner side of angle, longer setae curved mesally. First tergite about as long as tergites 2 to 4 combined, flattened on large basomedian area, inclined apically. Tergite 1 with basolateral margins expanded to form robust, laterally flattened processes bearing trichome on outer and ventral sides, smooth on inner sides. Lower inner margins of basolateral processes, likely homologous to inner marginal carinae, extending apically by short carinae. Raised outer margin, likely homologous to outer marginal carinae, touching elytral margin. Base of tergite 1 with low,

short carina bearing erect setae at each side of basolateral processes. Tergites 2 and 3 with marginal carinae reaching mid-length of respective tergum.

Male characters. Eyes large, tempora very short, about twice as long as diameter of facets. Legs without obvious sexual characters. Aedeagus (Fig. 5) with ventral process wide, almost truncate, acute at angles; dorsal process prominent, irregularly curved and narrowed to form acute tip. Apophysis inserted at left side of median lobe, arcuate, with exposed tip.

Female characters. Eyes smaller, tempora longer, about as 3 times as long as diameter of one facet.

Comments. This species possesses trichomes similar as those in *B. clavigeroides* (Jeannel, 1951). It may be easily distinguished from *B. clavigeroides* by the narrower elytra and abdomen and the longer abdominal tergite 1 (see Jeannel, 1951b, 1959).

***Batrisiotes puncticeps* sp. n.**

Holotype ♀: SRI LANKA: SABARAGAMUWA PROV.: Ratnapura 21.I.70, in rotten wood, ExpG # 16a (MHNG).

Paratype ♀: SRI LANKA: SABARAGAMUWA PROV.: Maratenna at 4500ft, 7 mls N Balangoda, 22.II.62, ExpL # 98 (MZLU).

Description. Length 2.25 mm. Body moderately convex. Punctuation very dense and fairly coarse, punctures mostly sharply delimited, on lateral portions of vertex and on frontal lobe partly confluent, on middle portion of vertex very fine and becoming sparse anteriorly. Pubescence very short and strongly recumbent. Head slightly shorter than wide, distinctly narrower and shorter than pronotum. Vertex swollen, impressed in centre of occipital margin, inclined anteriorly. Vertexal sulcus V-shaped, with arms angulate and subparallel before reaching vertexal foveae. Vertexal foveae in deep impressions, with anterior margins about in line of eyes centres. Frontal lobe inclined, slightly impressed in mid-line, with anterior margin weakly angulate (dorsal view). Antennal segment 4 to 6 subequal in size. Pronotum 0.45 mm long, 0.52 mm wide, with median sulcus long and deep, reaching anterior seventh of pronotal length, widened at basal end. One pair of inner antebasal foveae present. Disc with two low antebasal tubercles in front of antebasal foveae. Elytra each with strongly raised, elongate humeral tubercle; disc without swollen and impressed areas, lacking discal stria. Adsutural areas flat, almost at same level as inner part of disc, narrowed from middle to apical margin. Sutural striae each gradually widened from mid-length toward apical margin, forming smooth surface, at apical margin about as wide as combined largest width of adsutural areas. Apex slightly prominent in outer half, bearing dense trichome reaching to sutural stria. Setae of trichome short, orientated backward, and with curved ends. Abdomen with tergite 1 almost as long as tergites 2 and 3 combined, inclined toward base, convex, lacking impressions, with two lateral trichomes situated below elytral trichomes and consisting of very dense setae raised obliquely. Basolateral margins raised up to tergal mid-length. Tergites 2 and 3 with inner marginal carinae slightly longer than one third of respective tergal length.

Female character. Eyes large, tempora comparatively long, exceeding in length 5 facet diameters.

Comments. This species may be distinguished from its congeners by the abdomen bearing trichomes in combination with the long median sulcus of pronotum and the presence of a pair of antebasal foveae.

***Batrisiotes pyriformis* sp. n.**

Fig. 6

Holotype ♂: SRI LANKA: UVA PROV.: Diyaluma Falls, ca 400m, 23.I.70, litter, forest up stream waterfalls, ExpG # 21 (MHNG).

Description. Length 1.95 mm. Dorsal side of body with punctuation even, very fine and very dense. Pubescence very short and recumbent. Head trapezoid, about as long as broad, narrower than pronotum. Vertex slightly swollen, inclined gradually anteriorly. Vertexal foveae with anterior margins slightly posterior to line of anterior margins of eyes. Median vertexal stria faint, extending from neck about to line of posterior eye margins. Semicircular sulcus faint, indicated by fairly large, smooth, slightly impressed line. Frontal lobe slightly convex and inclined, with anterior margin truncate. Eyes large, tempora fairly short, about four times as long as diameter of one facet. Antennal segment 5 slightly longer than segments 4 or 6. Pronotum 0.36 mm long, 0.38 mm wide, with median sulcus deep, well marked, starting near base, extending to posterior seventh of pronotal disc. Discal tubercles and inner antebasal foveae lacking. Elytra with outer apical angles not prominent, obtusely angulate. Each elytron with discal stria extending from outer basal fovea almost to mid-length of disc. Humeral humps fairly high, elongate, abruptly ending posteriorly. Elytral trichomes loose, consisting of rows of about equally long, thickened setae situated on apical and apicolateral margins. Adsutural area flat, about in same plan as disc. Sutural striae normally narrow in basal half, widened gradually from mid-length toward apex, each at apical margin about as wide as punctate adsutural area. Abdomen with tergite 1 slightly longer than tergites 2 and 3 combined. Tergite 1 inclined toward base, inclined surface extending toward apical third of tergite, with two large and very deep, basolateral, foveiform impressions. Tergite 1 lacking trichomes, with basolateral margins strongly raised to form large, rounded protuberances reaching up to apical third of tergal length, with inner and outer marginal carinae short, close, meeting at highest point of each basolateral protuberance. Tergites 2 and 3 with faint lateral carinae.

Male characters. Mesotibiae thickened, with large, robust, curved apical spine and strong, oblique, subapical setae on mesal margin. Aedeagus (Fig. 6) with median lobe forming large ventral lamina narrowed toward blunt apex and joined to dorsal process. Apex of dorsal process widened, forming transverse lamina irregularly narrowed. Arcuate apophysis inserted at right side, not prominent apically.

Comments. This species is characterized by the absence of the pronotal foveae and abdominal trichomes.

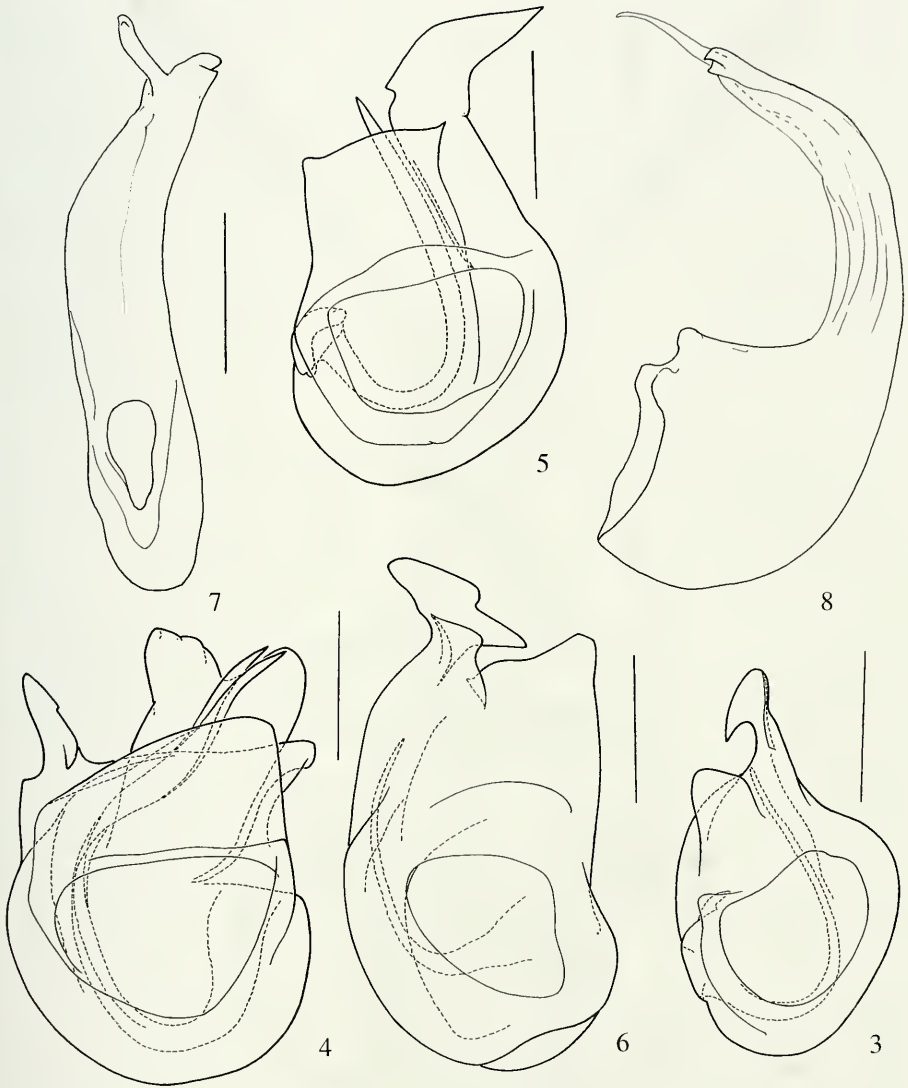
***Batoxylomorpha* gen. n.**

Fig. 9

Type species *Batoxylomorpha femoralis* sp. n. Gender: feminine.

Etyymology: the name is derived from the similar genus *Batoxyla* and the word *morpha*.

Description. Habitus as Fig. 9. Length 2.3 mm. Body moderately convex, head, pronotum, elytra and abdominal tergite 1 almost in same plan; punctuation very dense, mostly coarse. Pubescence on body and appendages short and recumbent.



FIGS 3 to 8: Aedeagi

3: *Barrisoplatus incisivus* sp. n., aedeagus in ventral view; 4: *Barrisoplatus occipitalis* sp. n., aedeagus in ventral view; 5: *Batrivotes mussardi* sp. n., aedeagus in ventral view; 6: *Batrivotes pyriformis* sp. n., aedeagus in ventral view; 7 and 8: *Batoxylomorpha* gen. n. *femorialis* sp. n., aedeagus in ventral (7) and lateral (8) views. Scale bars = 0.1 mm.

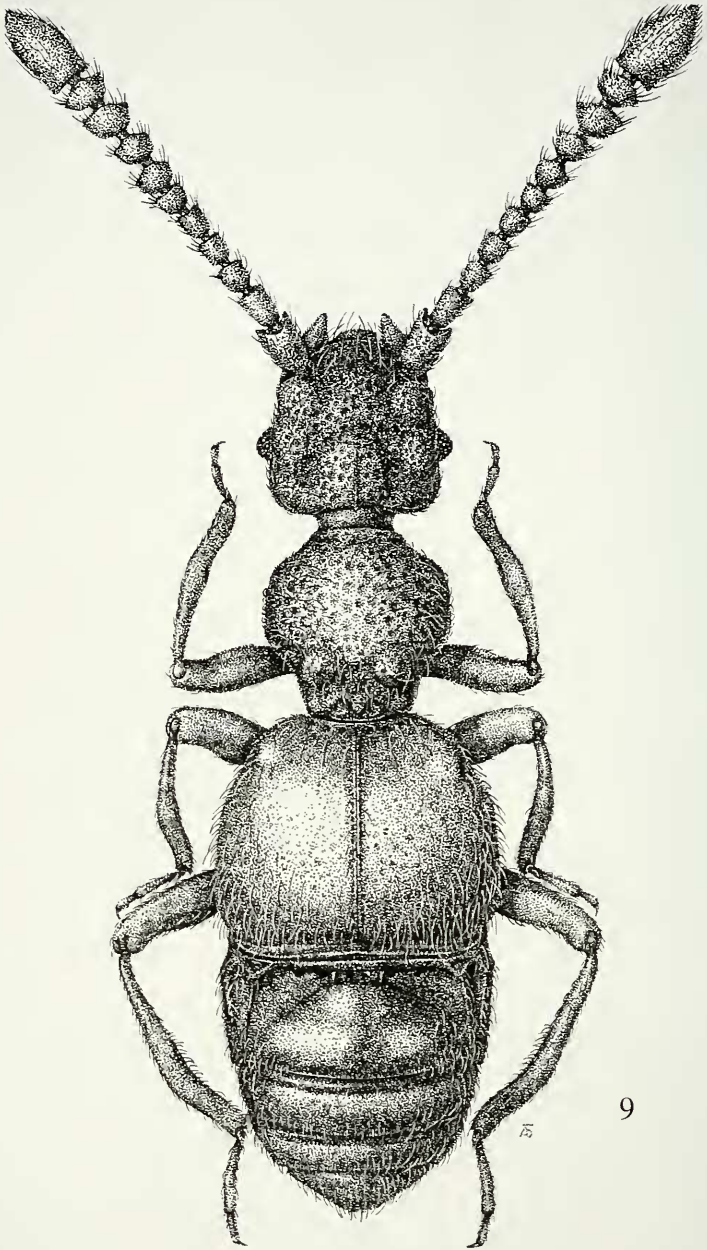


FIG. 9
Batoxylomorpha femoralis gen. n., sp. n.

Head about as long as wide, suboval. Vertex with pair of foveae and median carina, lacking sulci, convex and inclined toward neck. Occipital margin of vertex slightly arcuate. Antennal fossa widely separated, frontoclypeus wide and distinct from above. Interantennal bridge slightly impressed. Lateral frontal foveae absent. Antennal tubercles weakly developed. Lateral head margins convex and inclined. Eyes small, prominent, not notched, situated anterior to line of vertexal foveae, multifaceted, with small facets. Ocular-mandibular carina touching eye margins. Tempora long and rounded. Ventral side of head weakly swollen, moderately inclined toward neck. Postgenal erect setae inconspicuous. Neck with dorsomedian carina.

Antennae moderately long. Scape small, subcylindrical, with apical angles hardly prominent, lacking glandular orifices. Pedicel cylindrical, elongate. Segments 3 to 6 symmetrical. Club indistinctly 5-segmented, sole segment 11 large. Maxillary palpi with segments 3 short, narrowed mesally; segment 4 with very short basal stalk, widest at middle.

Pronotum cordiform, about as long and wide as head; disc raising slightly above plan of head, widest anterior middle. Disc evenly convex anteriorly and laterally, with two antebasal, acute tubercles, minute basomedian tubercle, two pairs of inner basolateral foveae, one pair of outer basolateral foveae and one pair of antebasal lateral foveae; lacking sulci, marginal denticles and basomedian carina. Lateral humps indistinct. Hypomeron with smooth, shiny intervals between coarse punctures; paracotal ridge reduced.

Elytra comparatively flat, not raising above plan of pronotum, combined much wider than long, each with sutural stria, lateral carina, and three basal foveae; basal ridge, discal stria and subhumeral fovea absent. Humeral area rounded, humeral protuberance absent.

Metasternum with anterior process sharply delimited by transverse ridge. Posterior intercoxal margin wide, truncate, with acute protuberance in middle. Lateral metasternal foveae widely separated. Metasternum covered throughout by dense, short pubescence.

Legs robust, femora thick at basis, moderately thickened toward apex. Tarsi conspicuously thick; segments 3 of protarsi and mesotarsi about as long as half of combined length of segments 1 and 2 of respective tarsi.

Abdomen longer than elytra, with 5 tergites visible in dorsal view, gradually narrowed apically. Tergite 1 longer than tergites 2 and 3 combined, slightly narrowed apically, impressed at base, with disc raising apically; outer and inner lateral carinae hardly raised, extending to apical margin; with one pair of short discal carinae and three pairs of basal foveae. Outer basal foveae lying at mid-distance of inner and discal carinae, inner foveae at each side of discal carinae. Tergites 2 to 3 similar in size, each shorter than tergite 4, impressed along base, with inner and outer lateral carinae not reaching apical margin, and single pair of lateral foveae. Tergites 4 with single pair of lateral carinae and lateral foveae. Sternite 1 in middle comparatively short, only somewhat longer than sternite 2, following sternites becoming gradually, slightly shorter. Sternite 1 with three pairs of basal foveae; inner pair close to intercoxal process, outer pair lying in large lateral impression, middle pair lying between

inner and outer foveae. Sternites 2 and 3 with deeply impressed base, one pair of discal carinae, one pair of basal foveae at each side of carinae, and one pair of lateral foveae.

Male secondary sexual characters located on legs. Aedeagus with median lobe narrowed distally to form tubular process, ventral process and setiform sensilla absent.

Habitat unknown.

Distribution. Sri Lanka.

Comments. *Batoxylomorpha* resembles *Batoxyla* Raffray and *Sathytes* Westwood by the lack of vertexal and pronotal sulci, and by the short pubescence and conspicuously dense punctation. The flattened body and the pattern of carinae on abdominal tergites are similar to those of *Batrisoplatus*. The new genus may be separated, and is likely unique, in having the following features in combination: the anterior metasternal process separated by a transverse ridge, the posterior metasternal process wide and truncate, the abdominal sternites 2 and 3 each with a pair of discal carinae, the tarsi robust with the segment 3 shorter than the segment 2.

Batoxylomorpha femoralis sp. n.

Figs 7 to 9, 11

Holotype ♂: SRI LANKA: SABARAGAMUWA PROV.: Gilimale, 1000m, 10.IV.1973, G. Benick (MHNG).

Description. Length 2.3 mm. Head with vertex slightly raised in middle, median carina ending by minute point (lateral view), slightly anterior to vertexal foveae. Tempora almost twice as long as eyes in dorsal view. Punctation even, coarse punctures much larger than puncture intervals; additional, minute punctures on puncture intervals. Antennal segments 3 and 5 similar, elongate, each as wide as and slightly shorter than pedicel; segments 4 and 6 each slightly shorter than segment 5, hardly longer than wide; segments 7 to 10 each about as long as or slightly longer than segment 6, segment 7 hardly wider than long, segments 8 to 10 distinctly wider than long; segment 11 twice as long as wide and about as long as combined length of segments 8 to 10. Pronotum hardly wider than long (ratio 51/52), slightly narrower than head with eyes. Antebasal tubercles pointed dorsally. Discal punctation as that on head. Median part of metasternum moderately impressed. Median part of abdominal sternite 1 shallowly impressed; sternites 2 to 4 flattened in middle. Elytra with punctation dense and fine, not clearly delimited, without additional minute punctures intervals. Abdomen with punctation mostly very fine and dense, shallow, larger punctures scattered. Tergite 1 with discal carinae about as long as one ninth of tergal length.

Male characters. Protibiae straight and gradually thickened in basal three fifth, slightly curved, with outer side convex, mesal side concave in apical two fifth. Mesotrochanters with small, very narrow subbasal apophysis, arising from posterior side and pointed obliquely. Mesotibiae with short, obtuse, subbasal denticle on mesal side. Metatibiae flattened laterally, slightly curved, widest posterior middle, strongly narrowed toward base, slightly narrowed toward apex (Fig. 11). Aedeagus (Figs 7, 8) very slender in ventral view, curved, strongly arcuate dorsally, with basal bulb strongly expanded ventrally, apex of median lobe with apophysis.

Tribasodema Jeannel

Fig. 10

Tribasodema Jeannel, 1961: 429; type species *Batrisus armatus* Raffray, 1894.

Description. Habitus as Fig. 10. Length 1.95-2.45 mm. Body elongate, convex. Punctuation mostly very sparse and fine, very fine on pronotum, coarse on elytra; pubescence mostly long.

Head pyriform, about as long as pronotum, with eyes about as wide as pronotum. Vertexal hump usually with median carina, delimited by vertexal foveae and deep semicircular sulcus. Vertexal foveae in deep impressions. Lateral margins of vertex broadly rounded. Antennal insertions distant. Antennal tubercles distinct or faint, their margins extending to form anteriomesal carina. Lateral frontal foveae absent. Frontal lobe wide, impressed between antennal tubercles, gradually inclined toward clypeal margin; frontoclypeal area large, prominent, not separated from frontal lobe. Eyes small, prominent, multifaceted, notched posteriorly, with small facets; anterior eye margins situated about at head mid-length. Tempora long, much longer than eyes, rounded. Vertexal margin rounded. Ocular-mandibular carina indistinct. Ventral side of head with short and convex anterior part, long, strongly inclined posterior part. Gular foveae in small, common impression. Neck with dorsomedian carina.

Antennae long. Scape cylindrical. Segments 2 to 8 similar in size, elongate or subglobose. Club loose, segments 9 and 10 moderately enlarged, segment 11 much larger than segment 10. Maxillary palpi moderately long, segment 3 longer than wide, widened apically, segment 4 with short basal stalk.

Pronotum raising above plan of head, cordiform, about as long as broad, broadly rounded anteriorly, widest in anterior half. Disc with two pairs of antebasal foveae, median longitudinal sulcus, two pairs of lateral longitudinal sulci, outer lateral sulci arcuate basally. Median sulcus separated from basal margin by short basomedian carina. Disc with pair of antebasal, acute protuberances at basal ends of inner lateral sulci, and pair of central spines lying at anterior ends of inner lateral sulci. Lateral humps distinct, without denticles. Antebasal transverse sulcus absent. Paranotal ridges entire, sinuate. Hypomera with basolateral foveiform or elongate impression.

Elytra large, longer than abdomen, convex, raising notably above plan of pronotum, each with three basal foveae and subhumeral fovea joined to lateral sulcus. Sutural striae obsolete or very fine. Basal ridge and discal striae absent. Lateral margins arcuate. Humeral protuberances distinct, humeral margins oblique.

Metasternum with median sulcus or narrow impression becoming deeper posteriorly; lateral metacoxal foveae fairly close, smaller than interval between them. Posterior intercoxal process fairly narrow, prominent, with short, rounded notch.

Legs long. Femora straight, robust, widest posterior mid-length, strongly narrowed basally, less narrowed apically. Tibiae slender, outer side of metatibiae with several longer setae. Tarsi slender, segment 3 shorter than or about as long as segment 2.

Abdomen lying notably below plane of elytra, gradually narrowed posteriorly, with 5 tergites visible in dorsal view. Tergite 1 moderately large, about as long as combined length of tergites 2 and 3, with basal impression narrow in middle, becoming larger near marginal carinae. Tergal disc convex. Marginal carinae fairly high at base, becoming gradually lower apically. Outer marginal carinae reaching apical

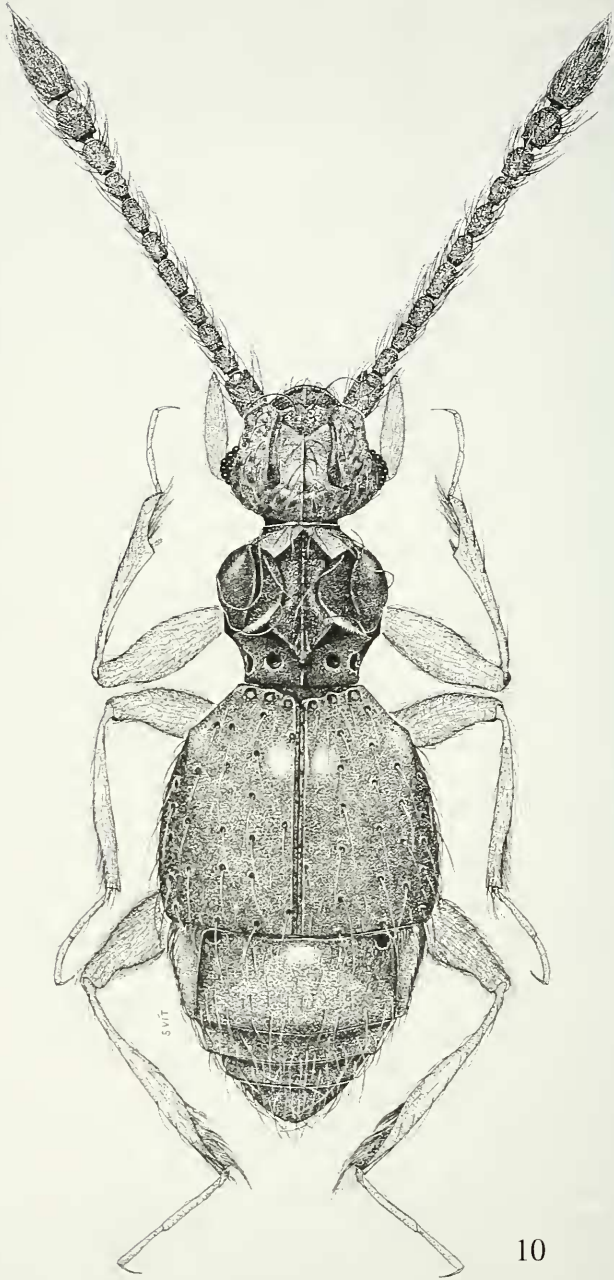


FIG. 10
Tribasodema armatum (Raffray).

margin, inner marginal carinae slightly shorter. Basodiscal carinae very short. Tergites 2 and 3 moderately inclined, with outer marginal carinae almost reaching apical margins; tergite 4 much shorter than tergite 1. Sternite 1 with three pairs of basal foveae. Following sternites without foveae.

Male secondary sexual characters located on antennae and legs. Eyes in males slightly larger than in females. Aedeagus highly reduced to form simple, elongate, arcuate or sinuate median lobe, lacking ventral process, apophysis and sensilla.

Habitats. Moist leaf and other forest litter and under bark, from plain up to montane habitats.

Distribution. Sri Lanka.

KEY TO SPECIES OF *TRIBASODEMA*

- 1 Vertex without median carina. Frontoclypeal punctation mostly very fine. Antennal segments 9 and 10 each about as long as wide or slightly longer than wide, female antennal segment 10 globular. Segment 11 about 2 to 2.5 times as long as wide *T. tribulosum* sp. n.
- Vertex with median carina. Frontoclypeal punctation coarse or confluent. Antennal segments 9 and 10 elongate, segment 11 about 3 times as long as wide 2
- 2 Male with mesal margin of protibiae angulate at widest point; mesotrochanters, mesofemora (Fig. 29) and mesotibiae lacking robust denticles or tubercles *T. armatum* (Raffray)
- Male with mesal margin of protibiae rounded at widest point; mesotrochanters, mesofemora and mesotibiae each with robust denticle or tubercle (Figs 26, 28) *T. factiosum* sp. n.

Tribasodema armatum (Raffray)

Figs 10, 12, 13, 18 to 22, 29

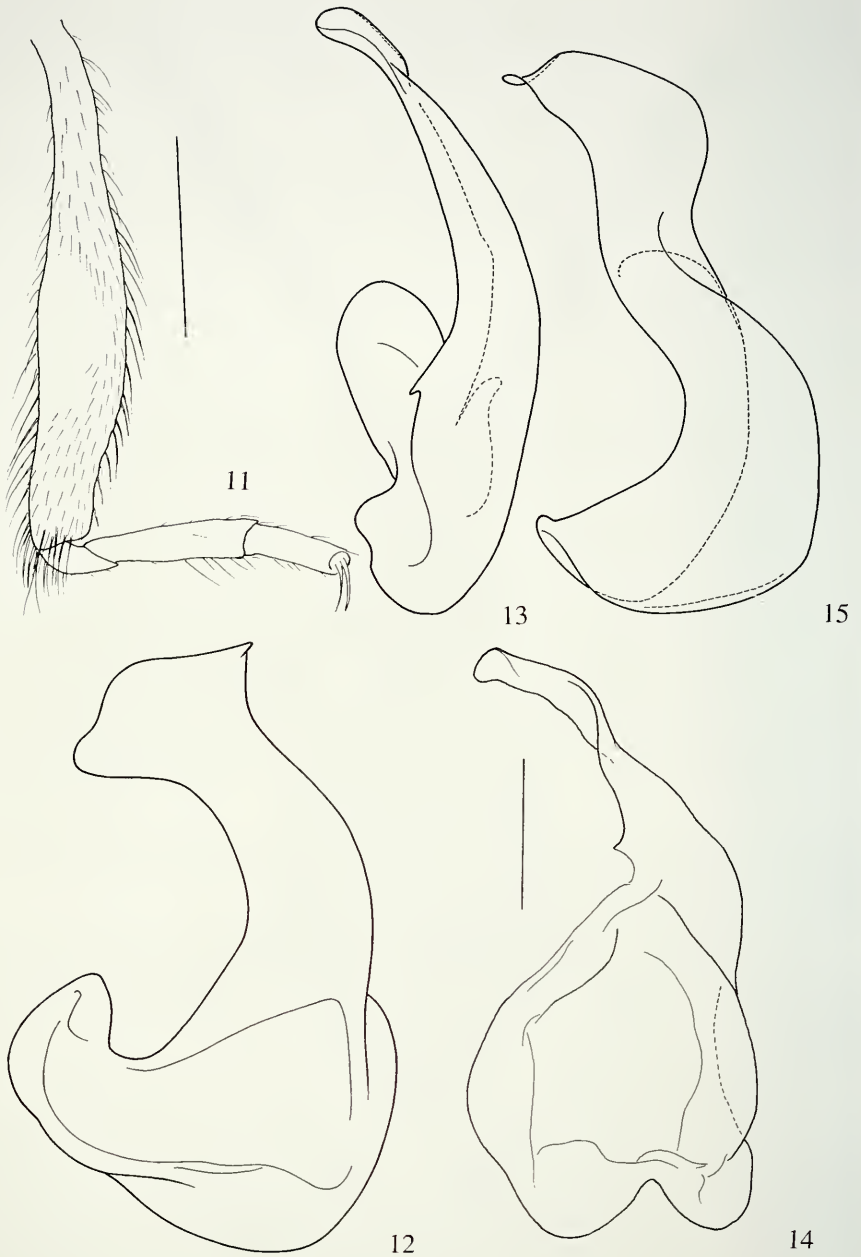
Batrisus armatus Raffray, 1894a: 447.

Tribasodema armatum; Jeannel, 1961: 430.

Type material: SRI LANKA: CENTRAL PROV., 1 ♀ labelled: Simon Nuwara Elia Maturata (hand-written) /Ceylon/ Muséum Paris 1917 Coll. A. Raffray/ TYPE (red)/ B. Armatus Raffray det. (MNHN); 2 ♂ and 1 ♀ without type and the original locality labels, one of the ♂ with Jeannel's hand-written labels "Tribasodema armatum R."/"armatus Raf" (MNHN), the second ♂ in MHNG, the ♀ in MNHN.

Additional material. SRI LANKA: Ceylon, Coll. Cl. Müller, 3 ♂ (ZSMC, MHNG).

Description. Length 2.35-2.45 mm. Pubescence semi-erect or erect. Head, pronotum, abdomen and metatibiae with additional, scattered, very long, erect setae. Head without eyes about as long as wide. Punctation scattered and very fine on middle part of vertex, more dense and less fine on lateral portions of vertex and on frontoclypeus. Pubescence semi-erect, several pairs of very long, erect setae on vertex, antennal tubercles and frontoclypeus. Frontal lobe with short median sulcus; anteriomesal carinae short, oblique. Vertex with median portion flat and obliquely raised toward occipital margin, highest at occipital margin; median carina sharp, high, long, extending to semicircular sulcus. Vertexal foveae small, lying at line of posterior eye margins. Lateral and lateroposterior parts of vertex broadly rounded, middle



FIGS 11 to 15: *Batoxylomorpha* gen. n. and *Tribasodema* Jeannel

11: *B. femoralis* sp. n., male metatibia with tarsus; 12 and 13: *T. armatum* (Raffray), aedeagus in ventral (12) and lateral (13) views; 14 and 15: *T. tribulosum* sp. n., aedeagus in ventral (14) and lateral (15) views. Fig. 11: scale-bar = 0.2 mm; figs 12 to 15: scale bar = 0.1 mm.

of occipital margin abruptly inclined. Antennae with segments 2 to 4 subequal in size, or segment 4 slightly longer than segment 3, each about 1.5 times as long as wide; segments 5 to 7 subequal in size, each distinctly longer than segments 2 or 3; segment 8 about as large as segment 3; segment 11 about 3 times as long as wide. Pronotum 0.50-0.52 mm long, 0.55-0.60 mm wide. Median longitudinal sulcus deep, slightly widened basally, wider than lateral longitudinal sulci. Anterior pair of discal spines pointed dorsally, posterior pair of discal spines slightly oblique. Elytra about as long as combined broad, raised along suture.

Male sexual characters. Antennae as Fig. 19. Antennal segment 9 as long as segment 7, asymmetrically thickened ventrally, with irregular, denticulate ventral margin; segment 10 (Fig. 18) longer than segment 9, impressed and bearing microsensillae, with basoventral margin expanded to form a ridge; segment 11 slightly longer than segments 9 and 10 combined. Protibiae (Figs 20, 21) gradually widened toward apical third, angulate and flattened at widest point, abruptly narrowed from widest point to apex, with mesal margin bearing row of robust, oblique setae. Mesotrochanters rounded mesally, with short setae. Mesofemora with small tuft of short, erect setae situated posterior basal third (Fig. 29). Mesotibiae with apical third flattened laterally and bearing dense, robust pubescence forming long tuft reaching slightly posterior apical margin of respective tibia, and with small, narrow, hook-like apical thorn (Fig. 22). Metatibiae curved in apical half, becoming gradually wider toward apical third, narrowed toward apex (dorsal view), with dorso-apical impression; apical half of mesal side of tibiae flattened and impressed, bearing dense, robust, long setae, and long, narrow setal tuft extending about to apical margin of tarsomere 1. Aedeagus (Figs 12, 13) with distal process large, widened apically in dorsal view, arcuate in lateral view.

Female characters. Eyes smaller than in male. Antennal segments 9 and 10 symmetrical, elongate, segment 10 slightly longer and wider than segment 9.

Comments. This species is easily distinguished by the shape of the male protibiae.

***Tribasodema factiosum* sp. n.**

Figs 16, 17, 23, 26, 28

Holotype ♂: SRI LANKA: CENTRAL PROV.: Kandy, 700m, 14.II.70, ExpG # 67a, on rotten tree stem (MHNG).

Paratypes: SRI LANKA: CENTRAL PROV.: same data as holotype, 2 ♂, 7 ♀ (MHNG, PCSK); same data but 16.II.70, ExpG # 70, under bark, 4 ♂, 3 ♀ (MHNG, PCSK); same data but 17.II.70, ExpG # 71, under bark, 3 ♂, 4 ♀ (MHNG); same data but 600m, 15.I.70, ExpG # 3c, sieved litter, 1 ♂, 2 ♀ (MHNG).

Description. Length 1.95-2.15 mm. Pubescence semi-erect on most of body, recumbent on abdomen. Head slightly wider than long. Punctuation very irregular, punctures mostly fairly large but shallow, partly confluent and separated by wrinkles, usually finer on median portions of vertex and frontoclypeus than on lateral portions. Vertex with large median portion swollen, delimited by semicircular sulcus, with low median carina extending from neck to transverse section of sulcus, highest near occipital margin, convex and inclined toward neck. Vertexal foveae lying slightly anterior to line of posterior eye margins. Frontal lobe lacking median sulcus; an-

teriomesal carinae long, arcuate, extending to near anterior clypeal margin. Antennae with all segments elongate, segments 2 to 7 subequal in size, segment 8 shorter than preceding segments, slightly longer than wide. Pronotum 0.47-0.51 mm long, 0.45-0.51 mm wide. Mesal sulcus widened basally, near base about twice as wide as in middle. Mediobasal carina very short. Basal area raised, irregularly punctate. Anterior discal spines pointed dorso-apically, raising from small tubercles. Elytra slightly wider than long, with faint sutural striae, adsutural areas raised.

Male characters. Antennae as Fig. 23. Antennal segments 9 and 10 appearing symmetrical in dorsal view, each distinctly longer than wide; segment 9 longer than segment 7, thickened apicoventrally; segment 10 with concave emargination on ventral side, normally thick near base, becoming gradually more thin toward apex (lateral view); segment 11 about as wide as segment 10, almost as long as segments 8 to 10 combined, 3 times as long as wide, with narrow, basal, glandular socle perpendicular to segmental axis. Mesotrochanters with large spine on posterior side. Mesofemora thickened, with large denticle bearing short pubescence at middle of mesal side (Fig. 28). Mesotibiae flattened, with mesal side slightly, gradually widened toward apical third, impressed in apical third, oblique denticle posterior middle and large, oblique, apical tooth (Fig. 26). Outer side of apical third and apex of mesotibiae with very dense, short, robust, recumbent setae. Metatibiae slightly arcuate, straight in apical portion, with ventral side flattened mesally. Apical third of metatibiae with robust, very dense mesal pubescence, becoming gradually longer toward apex, and with compact, narrow, subapical setal tuft exceeding apical margin of tarsomere 1. Aedeagus (Figs 16, 17) with distal process moderately large, abruptly bent at apex, straight in ventral view, arcuate in lateral view.

Female characters. Eyes slightly smaller. Antennal segments 9 and 10 similar to those of male but slightly shorter.

Comments. This species may be easily distinguished by the male mesolegs bearing robust denticles or tubercles.

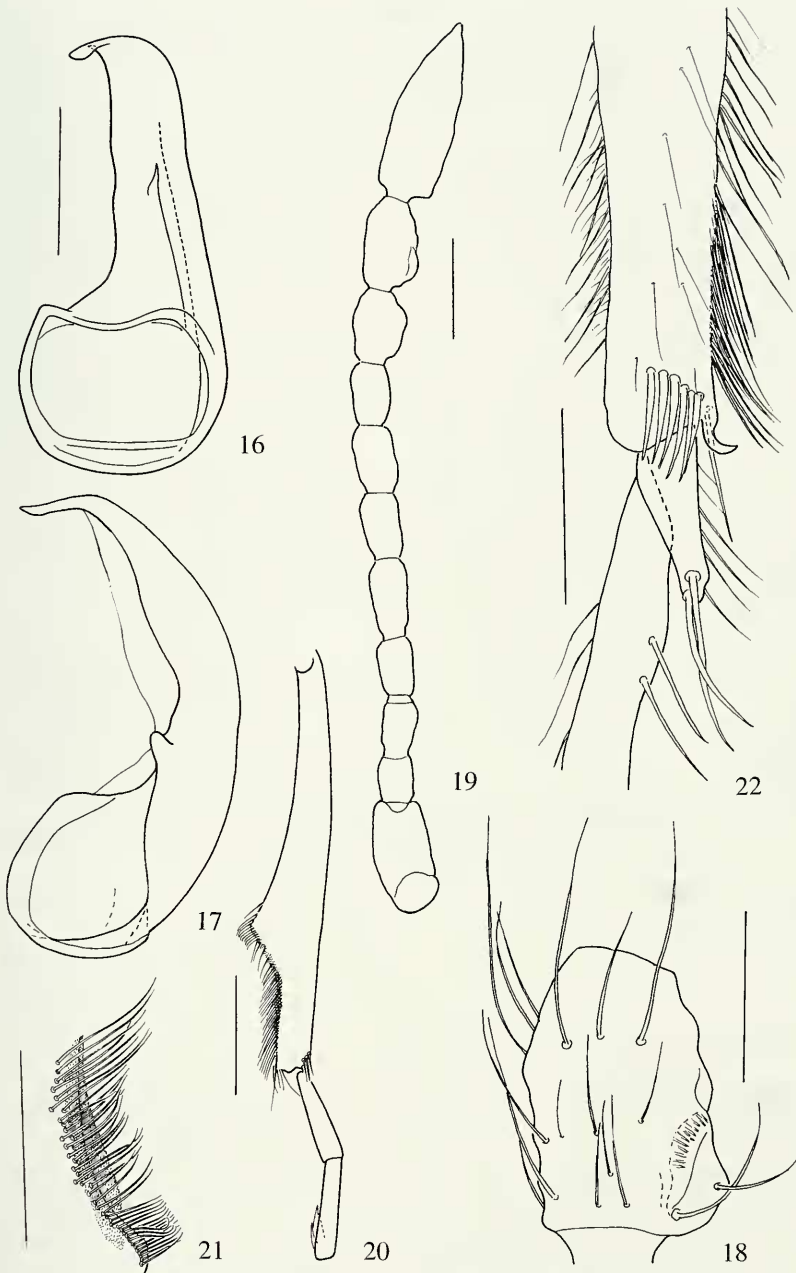
Tribasodema tribulosum sp. n.

Figs 14, 15, 24, 25, 27

Holotype ♂: SRI LANKA: CENTRAL PROV.: Kandy 700m, 17.II.70, ExpG # 71, under bark (MHNG).

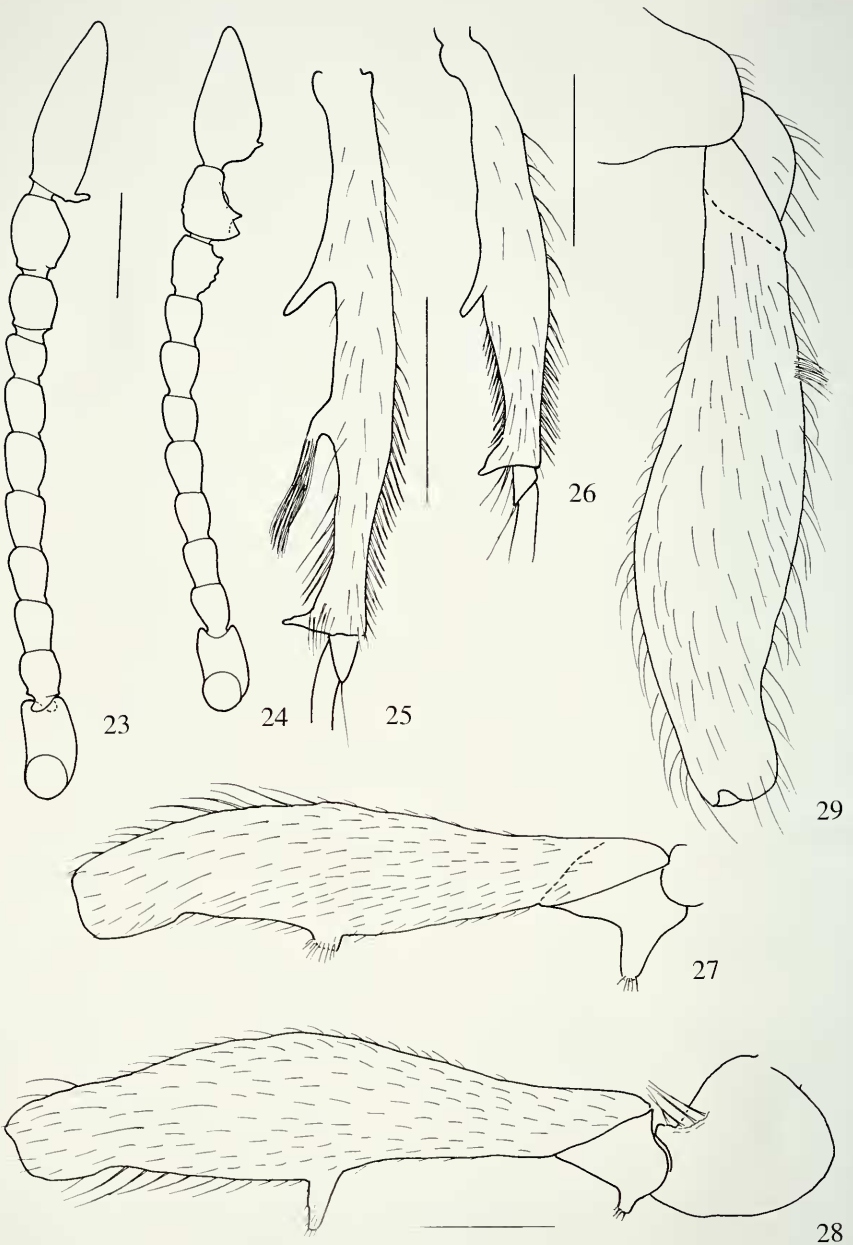
Paratypes: SRI LANKA: CENTRAL PROV.: same data as holotype, 1 ♂, 9 ♀ (MHNG, PCSK); Kandy, 600m, 4.II.70, ExpG # 3c, forest litter, 1 ♀ (MHNG); Mululla, 600, 4.II.70, ExpG # 45a, under bark, 1 ♂ (MHNG); above Talatuoya. 950-1000m, ExpG # 27a, 1 ♂ (MHNG); Kadugannawa, 500m, 5.XII.72 ExpG # 63, 1 ♀ (MHNG); WESTERN PROV.: Colombo Dist., Labugama 400 ft, 24.VIII.73, G. Ekis, 1 ♀ (NMNH).

Description. Length 2.0-2.15 mm. Pubescence mostly semi-erect, that on abdomen almost recumbent. Head, pronotum, abdomen and metatibiae with several additional, very long setae. Head wider than long. Punctuation sparse and very fine on most of vertex and large portion of frontoclypeus, dense and coarse on posterior and mesal sides of antennal tubercles. Vertex strongly swollen in middle portion, highest in centre, lacking median carina. Vertexal foveae lying in line of posterior eyes margins. Frontal lobe lacking median sulcus; anteriomesal carinae long, curved mesally antennal fossa and extending on frontoclypeus almost to clypeal margin.



FIGS 16 to 22: *Tribasodema* Jeannel

16 and 17: *T. factiosum* sp. n., aedeagus in ventral (16) and lateral (17) views, scale bar = 0.1 mm; 18 to 22: *T. armatum* (Raffray), male antennal segment 10 (18), scale bar = 0.1 mm; male antenna, scale bar = 0.2 mm (19); male protibia with tarsus (20), scale bar = 0.2 mm; mesal protibial notch (21), scale bar = 0.1 mm; apical part of male mesotibia with base of tarsus (22), scale bar = 0.1 mm.

FIGS 23 to 29: *Tribasodema* Jeannel

23: *T. factiosum* sp. n., male antenna; 24: *T. tribulosum* sp. n., male antennae; 25: *T. tribulosum* sp. n., male mesotibia; 26: *T. factiosum* sp. n., male mesotibia; 27: *T. tribulosum* sp. n., male mesofemur; 28: *T. factiosum* sp. n., male mesofemur; 29: *T. armatum* Jeannel, male mesofemur. Scale bars = 0.2 mm.

Antennal segments 2 to 8 elongate, segments 2 to 7 subequal in size, segment 8 distinctly shorter than segment 7. Pronotum similar to that of *T. armatum* but median longitudinal sulcus widened basally and twice as wide near base as in middle. Basal area irregularly wrinkled. Anterior discal spines pointed dorso-apically. Elytra combined wider than long, raised along suture.

Male characters. Antennae as Fig. 24. Antennal segment 9 asymmetrical, widened apicolaterally and impressed ventrally; segment 10 asymmetrical, widened basolaterally, deeply impressed on ventral side; segment 11 as long as or lightly longer than segments 9 and 10 combined, narrower than segment 10, about 2 times to 2.5 times as long as wide, with outer side more arcuate than inner side. Mesotrochanters (Fig. 27) with large denticle on mesal side. Middle of dorsomesal side of mesofemora with small tubercle bearing short setiform sensillae (Fig. 27). Mesotibiae (Fig. 25) with outer side slightly, almost evenly arcuate; mesal side thickened from base to middle third, with large, curved tooth arising between basal fourth and third; middle third of mesotibiae flattened and smooth mesally, with denticle bearing long, compact, narrow setal tuft reaching almost tibial apex; apical third impressed; apex expanded to form conspicuous, triangular denticle perpendicular to tibial axis; apical third of outer side with very dense pubescence; dorso-apical margin with short, robust setae. Metatibiae gradually, moderately thickened toward apical fifth; apical fifth obliquely truncate and with compact, long and narrow setal tuft reaching slightly posterior tibial apex; apical half of mesal side and apex with conspicuous, dense and robust pubescence. Aedeagus (Figs 14, 15) with distal process moderately large and fold subapically in ventral view, sinuate in lateral view.

Female characters. Antennal segment 9 slightly elongate, subglobular; segment 10 globular.

Comments. This species may be easily separated by the absence of vertexal carina. It possesses an antennal club distinctly shorter than that in its congeners.

Veddabatrus gen. n.

Fig. 30

Type species: *Veddabatrus sexualis* sp. n. Gender: masculine.

Etymology: the name is derived from Veddas, the ancient inhabitants of Sri Lanka, combined with an arbitrary abbreviation of Batrisini.

Description. Habitus as Fig. 30. Body convex, 2.35-2.90 mm long. Punctuation mostly fine and sparse. Pubescence long, particular long setae absent.

Head subpentagonal, about as long as wide. Vertex with median hump low, convex, delimited by vertexal foveae and faint sulci. Median vertexal carina distinct. Sulci indicated by short, wide, glabrous impression anterior to each vertexal fovea, and by glabrous, impressed area on inclined part of frontoclypeus, anterior to vertexal hump. Antennal fossae broadly distant. Antennal tubercles hardly distinct, very weakly raised above plan of lateral parts of vertex. Lateral frontal foveae absent. Areas posterior antennal tubercles horizontal, convexly inclined laterally. Interantennal bridge and frontoclypeus not separated, wide, almost in same plan, distinct from above. Mandibular-ocular carinae bifid, with upper branch curved dorsally anterior eyes margin, lower branch reaching eye margin. Eyes small, prominent, not

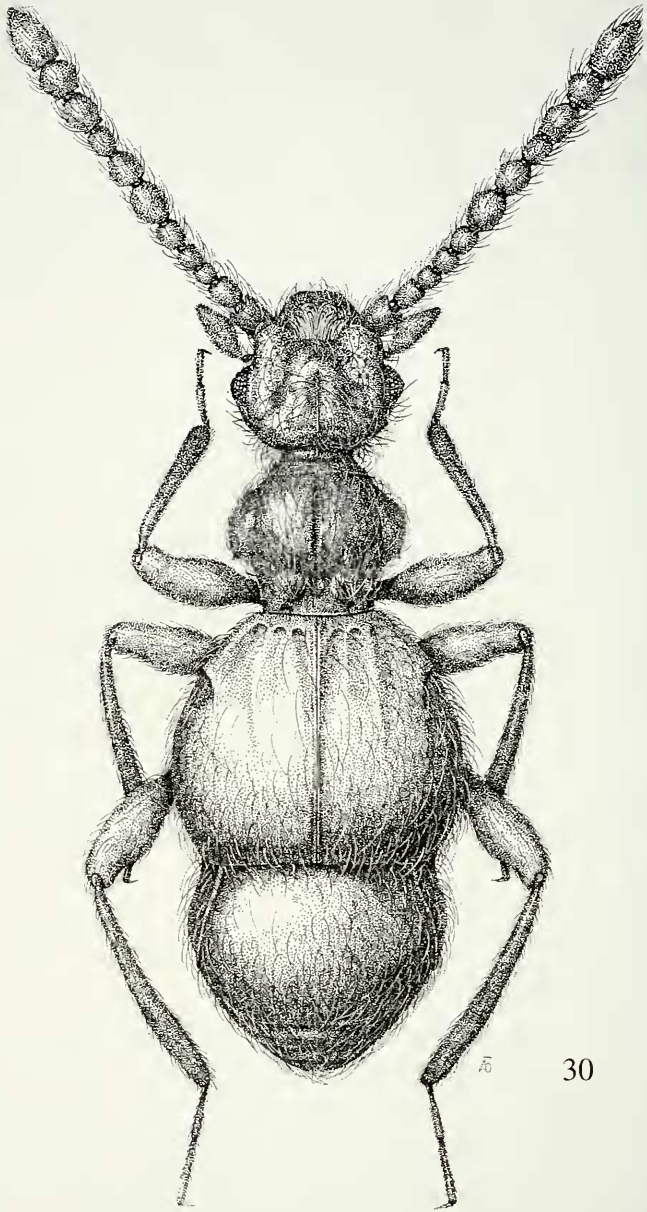


FIG. 30
Habitus of *Veddabatrus sexualis* gen. n., sp. n.

notched, with centres situated about at head mid-length, with small facets. Tempora long, evenly convex. Occipital margin moderately raised above plan of neck, convex, inflecting. Postgenae with perpendicular, long and sparse setae. Gular area not swollen, slightly inclined toward neck. Gular foveae in very deep foveiform impression. Neck with mediodorsal carina.

Antennae moderately long. Scape and pedicel subcylindrical, apical angles of scape not expanded and lacking glandular opening; segments 3 to 7 similar to pedicel. Club distinct, 3-segmented. Maxillary palpi with segment 2 curved and gradually thickened toward apex; segment 3 short, narrowed mesally, segment 4 without basal stalk, gradually narrowed apically.

Pronotum cordiform, about as long as wide, strongly convex, strongly narrowed anterior and posterior to lateral humps, raising high above plan of head, with median and two lateral sulci, pair of acute antebasal tubercles, basomedian and two admesal carinae, two pairs of inner basolateral foveae, one pair of outer basolateral foveae and one pair of antebasal foveae. Admesal carinae each with two denticles anterior to antebasal tubercles. Lateral humps large, convex, with or without denticle. Paranotal ridge strongly arcuate, not shortened.

Elytra convex dorsally and laterally, raising above plan of pronotum and abdomen, longer and much wider than pronotum, steeply inclined toward apical margin, each with three basal foveae, subhumeral fovea, deep sutural stria, discal stria and lateral carina extending anterior to line of humeral angle. Base fold-likely raised above foveae.

Metasternum deeply impressed in middle, with lateral metasternal foveae close, in common impression posterior metasternal process.

Legs long. Femora straight, narrowed basally and apically. Tibiae slender, with long, erect pubescence on outer side. Tarsi slender, segment 3 longer than segment 2.

Abdomen convex, longer than elytra, with 4 tergites visible in dorsal view. Tergite 1 about as long as or longer than tergites 2 and 3 combined, slightly widened apically, slightly inclined at apex, with three basal impressions separated by discal carinae, one pair of basolateral foveae, two pairs of mediobasal foveae at each side of discal carinae. Outer and inner marginal carinae of tergite 1 not raised, outer shortened, inner extending to apical margin of tergite. Tergites 2 and 3 similar in size, parallel-sided, with basal sulcus and one pair of basolateral foveae. Tergite 4 longer than tergite 3, inclined, with one pair of basolateral foveae. Sternite 1 with two deep, basal sulci at each side of median area and two large, basolateral impressions covered by pubescence; with six foveae, one at each end of basal sulci and one in each basal impression. Sternites 2 to 4 each with two pairs of basolateral foveae.

Male sexual characters affecting frons, antennae, legs and abdominal sternites. Aedeagus very strongly sclerotized, with basal bulb wide, dorsal and ventral processes of median lobe robust, and ventral diaphragm small.

Habitat. Forests, under logs, under bark, and in litter.

Distribution. Sri Lanka and South India.

Comments. This genus is likely related to *Tribasodema* Jeannel, *Batrisodiola* Jeannel, *Coryphomobatrus* gen. n. described below, *Tribasodites* Jeannel, and *Coryphomodes* Jeannel. It shares with them, in addition to the similar habitus, the

moderately inclined frontoclypeus, the long tempora, the well developed vertexal hump, the pronotum with acute antebasal tubercles, the presence of one mesal and one pair of lateral sulci and the foveal pattern, including three foveae at base of each elytron. It may be distinguished from the former three genera, but not from *Tribasodites* and *Coryphomodes*, by the discal carinae of the pronotum bearing two denticles anterior to the acute antebasal tubercle. *Tribasodites* may be distinguished from *Veddabatrus* by the presence of lateral frontal foveae, the short abdominal tergite 1, the aedeagus elongate, with large ventral diaphragm and lacking robust ventral process, and the short tibial pubescence. *Coryphomodes* was described (Jeannel, 1960b) as having elytra with two basal foveae. The type species of *Coryphomodes*, *C. cristatus* Jeannel from Kumaon, India and the other species from India, *C. calcaratus* Jeannel, *C. humeralis* Jeannel and *C. temporalis* Jeannel, have three basal foveae, while *C. brevispina* (Jeannel) and *C. spinicollis* (Sharp) from Japan have elytra with two basal foveae (material of *C. coomani* (Jeannel) was not examined). Probably, these species form a polyphyletic assemblage. *Coryphomodes cristatus*, *C. calcaratus* and *C. humeralis* are linked, and separated from *Veddabatrus*, by large antennal foveae, comparatively flat elytra not or slightly raised above plan of pronotum, with discal striae replaced by carinae, abdominal tergite 1 short, only slightly longer than tergite 2, and very short tibial pubescence. The presence of the elytral carinae is likely a synapomorphy of these three species. *Coryphomodes temporalis* lacks antennal foveae and has elytra and other diagnostic characters, including the long tibial pubescence, similar to those in *Veddabatrus sexualis*. Therefore, *Coryphomodes temporalis* Jeannel is transferred here to *Veddabatrus*, comb. n.

Unfortunately, the male genital characters of the Indian *Coryphomodes* species could not be examined. The descriptions of two of them are based on males but their dissected aedeagi are not deposited in the NHML together with the specimens. As the descriptions and illustrations of the aedeagi published in Jeannel's latest papers are often inaccurate, their characters that may indicate relationships remain to be examined.

KEY TO SPECIES OF *VEDDABATRUS*

- 1 Frontoclypeus with inverted Y-shaped carina. Median vertexal carina sinuate in lateral view. Margins of lateral pronotal humps with minute denticle, not crenulate. Antennal segments 3 and 4 each much longer than wide. Discal carinae of tergite 1 as long as fourth of tergite (South India) *V. temporalis* (Jeannel)
- Frontoclypeus without carina. Median vertexal carina straight in lateral view. Discal carinae of tergite 1 very short 2
- 2 Margin of lateral pronotal humps with distinct denticle and crenulate. Antennal segments 3 and 4 slightly longer than wide. Male with frontoclypeus bearing bunch of setae, antennal segments 6 and 7 enlarged, 6 flattened ventrally *V. sexualis* sp. n.
- Margin of lateral pronotal humps smooth, lacking denticles, not crenulate. Antennal segments 3 and 4 conspicuously longer than wide. Male with frontoclypeus and antennal segments 6 and 7 unmodified . *V. asper* sp. n.

Veddabatrus sexualis sp. n.

Figs 30, 31, 33, 34, 37

Holotype ♂: SRI LANKA: NORTHERN PROV.: 2 mls NE Puliyan Kulam, 6.II.70, ExpG # 48b, forest litter (MHNG).

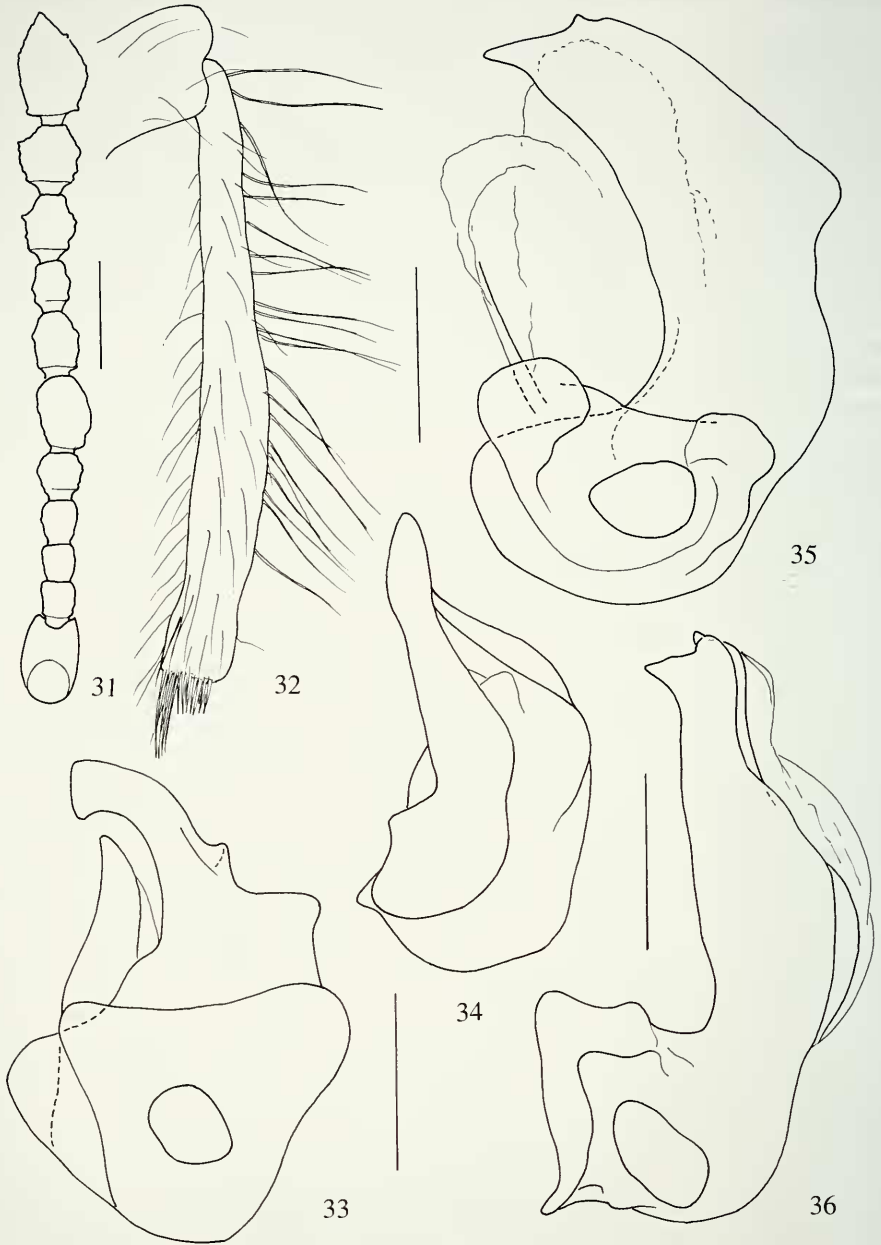
Paratypes: SRI LANKA: NORTHERN PROV.: same data as holotype, 3 ♂, 3 ♀ (MHNG); Nedunleni, 6.II.70, ExpG # 49, forest litter, 1 ♂, 3 ♀ (MHNG); small stream 2 mls E Mankulam, 14.II.62, ExpL # 75, under logs, 1 ♂ (MZLU); NORTH CENTRAL PROV.: Ambagaswewa, 3.II.70, ExpG # 44b, under bark, 2 ♀ (MHNG); Alut Oya, 3.II.70, ExpG # 43b, under bark, 4 ♂, 7 ♀ (MHNG, PCSK); Habarana, 7-8.II.62, ExpL # 55, under bark, 1 ♀ (MZLU); EASTERN PROV.: Kantalai, 2.II.70, ExpG # 40a, under bark, 1 ♂ (MHNG).

Description. Length 2.35-2.40 mm. Pubescence semi-erect on head and pronotum, erect on elytra, recumbent on abdomen. Head with fine, granulate punctation on most of vertex; frontoclypeus irregularly wrinkled; punctation on antennal tubercles irregular, very shallow. Pubescence on median portion of vertex curved mesally, on lateral portion of vertex curved anteriorly. Median vertexal carina extended anteriorly up to line of anterior eye margin, slightly raised at anterior end, straight in lateral view. Tempora almost twice as long as eyes in dorsal view. Antennae with granulate punctation; segments 3 and 4 subequal, slightly smaller than segment 2; segments 5 and 6 in female equally large, about as long and wide as segment 2, in male segment 5 about as segment 2, following segments modified. Pronotum as wide as or slightly narrower than head with eyes. Margins of humps crenulate and with small basolateral denticle. Punctation finely granulate. Pubescence on most of disc curved posteriorly, along base curved anteriorly, on lateral humps curved mesally. Elytra about 1.5 times as long as pronotum, combined elytral width distinctly exceeding elytral length. Discal stria fine, hardly extending posterior basal third of disc. Humeral protuberance distinct, angulate. Punctation very fine and sparse. Abdominal tergite 1 about 1.1 to 1.5 times as long as tergites 2 and 3 combined. Discal carinae very short, not exceeding posterior basal impression, often concealed by elytra. Mesal part of tergite 2 horizontal, that of tergite 3 slightly inclined posteriorly. Punctation fine, consisting of punctures larger and denser than those on elytra.

Male characters. Frontoclypeus with dense bunch of yellow, erect setae. Antennae (Fig. 31) with segments 6 and 7 conspicuously modified, segment 6 about as large as scape, 1.5 times as long as wide, flattened ventrally; segment 7 smaller than segment 6, much larger than segment 2, about 1.3 times as long as wide; segment 8 as long as and narrower than segment 5, distinctly longer than wide; segment 9 about as large as segment 7; segment 10 as long as and wider than segment 9, slightly longer than wide; segment 11 about 1.7 times as long as wide, distinctly shorter than segments 9 and 10 combined. Metasternal impression very deep. Metacoxae with spinose apicoventral area (Fig. 37). Metatrochanters expanded posteriorly to form large laminae sharply margined ventrally and bearing apophysis on dorsal side (Fig. 37). Sternite 5 with large, shallow impression. Aedeagus (Figs 33, 34) with basal bulb conspicuously wide, right dorsal process abruptly narrowed, curved in apical part.

Female characters. Antennal segments 6 and 7 unmodified; segments 8 to 11 slightly shorter than those in male, segment 11 about as long as segments 9 and 10 combined.

Comments. This species is characterized by the crenulate pronotal humps and the sexually modified frons and antennal segments 6 and 7.



FIGS 31 to 36: *Veddatratrus* gen. n.

31: *V. sexualis* sp. n., male antenna, scale bar = 0.2 mm; 32: *V. asper* sp. n., male metatibia, scale bar = 0.1 mm; 33 and 34: *V. sexualis* sp. n., aedeagus in ventral (33) and lateral (34) views, scale bar = 0.1 mm; 35 and 36: *V. asper* sp. n., aedeagus in ventral (34) and lateral (35) views, scale bar = 0.1 mm.

Veddabatrus asper sp. n.

Figs 32, 35, 36, 38

Holotype ♂: SRI LANKA: SABARAGAMUWA PROV.: Deerwood, Kuruwita, 6 mls NNW Ratnapura, 18-21.II.62, ExpL # 90:III, under bark of logs, forest (ZMLU).

Description. Length 2.3 mm. Pubescence as in *V. sexualis*.

Head without granulate punctuation. Punctuation fairly coarse on frontoclypeus and on antennal tubercles, very fine on vertexal hump, coarse and very irregular, forming wrinkles, posterior antennal tubercles, on lateral parts of vertex. Mesal vertexal carina straight, thickened and raised anteriorly, forming a tubercle. Tempora moderately longer than eyes in dorsal view. Antennae with fine, granulate punctuation; segments 3 to 7 about equally wide; segment 2 and 3 equally long, segment 3 slightly slender than segment 2, about 1.5 times as long as wide; segment 4 longer than segment 3, about twice as long as wide; segment 5 distinctly longer than segment 4; segments 6 and 7 each about as long as segment 4 (followings segments missing). Pronotum hardly wider than long and slightly wider than head with eyes. Margins of humps smooth, lacking basolateral denticle. Punctuation partly granulate, mostly very fine, on admesal areas partly coarse. Elytra about 1.3 times as long as pronotum, combined elytral width distinctly exceeding elytral length. Humeral protuberance angulate. Discal striae short and almost faint, not reaching posterior basal fifth of disc. Punctuation very fine. Abdomen with tergite 1 about as finely punctate as elytra. Discal carinae very short, about as long as 1/8 of tergite, exposed in dorsal view. Tergites 2 to 4 strongly inclined ventrally.

Male characters. Metasternum very deeply impressed. Mesotrochanters each with small, slender, basal apophysis. Mesotibiae straight, thickened from base to middle, from middle to apical fourth almost evenly thick, narrowed subapically (Fig. 32). Apical margin of metacoxae spinose on narrow area. Metatrochanters with anterior margin expanded to form smooth, arcuate lamina; denticulate at centre of apical margin (Fig. 38). Metatibiae almost straight and evenly slender in basal two fifth, in apical three fifth slightly curved and thickened, bearing bunch of long, robust apical setae. Sternite 5 flattened, with conspicuously dense punctuation, middle part of apical margin convex. Aedeagus (Figs 35, 36) with basal bulb much wider than long, right dorsal process large, arcuate, obtusely angulate at middle of outer margin and acute at tip in ventral view.

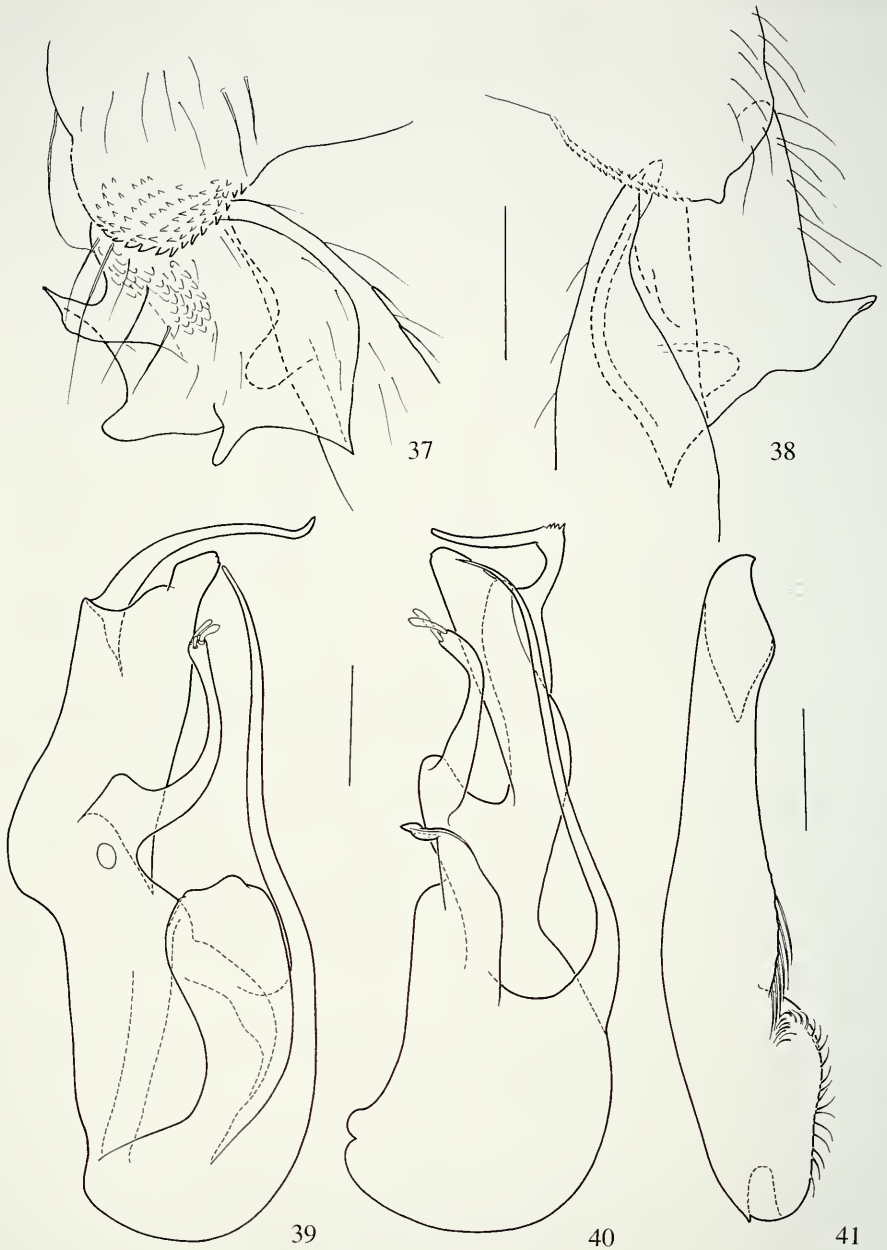
Comments. This species may be easily distinguished from *V. sexualis* by the smooth pronotal humps and unmodified frons in male, and from *V. temporalis* by the very short discal carinae of the abdominal tergite 1.

Coryphomus Jeannel

Fig. 42

Coryphomus Jeannel, 1949: 136; type species: *Batrisus gladiator* Raffray, 1913.

Leleup (1981) redescribed and also raised to genus rank the monospecific *Camptomites* Jeannel and *Camptomidius* Jeannel that Jeannel placed previously as subgenera of *Coryphomus*. This action was published somewhat cryptically and overlooked by subsequent workers. *Coryphomus* includes presently 35 valid species, all Afrotropical in distribution. Leleup (1976) found *Coryphomus* common in forested areas and expected tens of additional species to be discovered. *Coryphomus* is



FIGS 37 to 41

37: *Veddabatrax sexualis* gen. n., sp. n., male metatrochanter; 38: *V. asper* sp. n., male metatrochanter; 39 and 40: *Coryphomobatrax frater* gen. n., sp. n., aedeagus in dorsal (39) and lateral (40) views; 41: *Coryphomus adventus* sp. n., male metatibia. Scale bars = 0.1 mm.

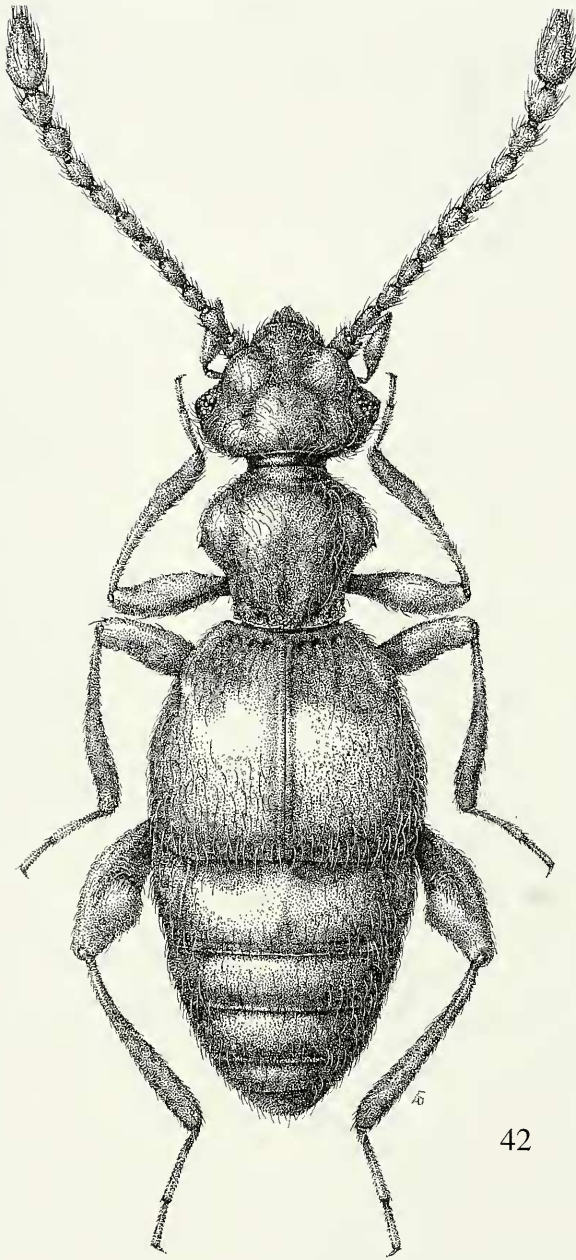


FIG. 42
Coryphomus adventus sp. n.

morphologically diverse and its constituent species are not linked by any known synapomorphy. However, the Sri Lankan species described below fits the description (Jeannel, 1949), the key characters (e.g., Jeannel 1959), and the Leuleup's 1981 redescription of *Coryphomus*. We have examined seven Afrotropical species of *Coryphomus* s. str. and failed to find convincing reasons not to include the new species within the group. In addition to *Coryphomus* s. str., *Coryphomellus* Jeannel is the only subgenus currently recognized as valid. It includes three species with pronotal disc having tri-spinose carinae.

***Coryphomus (Coryphomus) adventus* sp. n.**

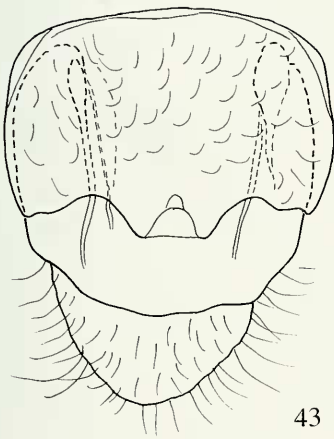
Figs 41, 42, 45, 46

Holotype ♂: SRI LANKA: NORTH WESTERN PROV.: Rajakadaluwa, sea level, coconut plantation, 31.I.70, ExpG # 36b (MHNG).

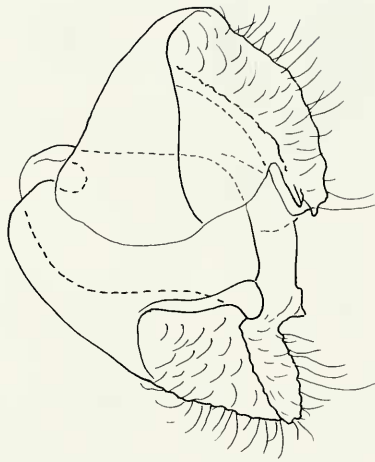
Paratypes: SRI LANKA: NORTH WESTERN PROV.: same data as holotype, 2 ♂, 7 ♀ (MHNG, PCSK).

Description. Habitus as Fig. 42. Length 1.65-1.70 mm. Body convex, slender. Punctuation dense and fine, slightly finer on abdomen than on remainder of dorsal surface of body. Pubescence short, recumbent.

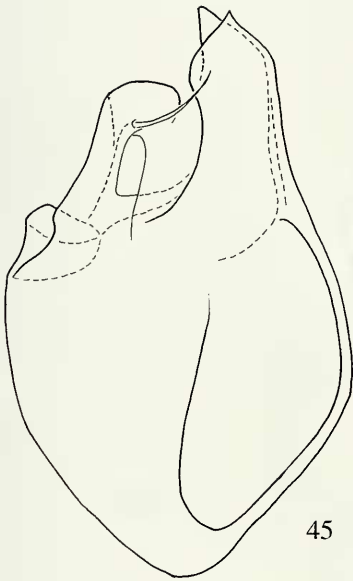
Head subrectangular, as long as wide, slightly narrowed than pronotum. Vertex raised mesally, forming hump delimited by vertexal foveae and semicircular sulcus. Posterior and lateral sides of vertex convex. Vertexal median carina very short, extending from up to highest point of vertex. Antennal fossa widely separated. Lateral frontal foveae absent. Interantennal bridge impressed. Frontoclypeus large, frontal lobe gradually inclined, throughout distinct in dorsal view. Antennal tubercles faint or weakly developed. Semicircular sulcus well delimited, narrow, with transverse section wide, only slightly arcuate. Lateral margins of head carinate; carinae sinuate, extending on to antennal tubercles and frontoclypeus, on frontoclypeus converging but not joined. Eyes large, prominent, multifaceted, with centres slightly anterior to line of vertexal foveae. Tempora long, strongly narrowed toward neck, without longer, erect setae. Ventral side of head not swollen, moderately inclined toward neck. Postgenae with basal row of long, erect setae orientated ventrally. Neck with dorso-median carina. Antennae long, slender. Scape short, narrowed basally, flattened dorsally, with apical angles not expanded. Segments 2 to 8 similar in size; club distinctly 3-segmented. Antennal segment 2 almost twice as long as wide; segments 3 to 7 each as long as and slightly narrower than segment 2; segment 8 hardly smaller than segment 7; segment 9 symmetrical, 1.3 times as long as wide; segment 10 asymmetrical, almost as long as segment 9, slightly longer than wide; segment 11 slightly shorter than combined length of segments 9 and 10, about 1.6 times as long as wide. Maxillary palpi with segment 3 short, narrowed mesally; segment 4 with short basal stalk, widest anterior to mid-length. Pronotum moderately convex, as long as wide, as wide as head, widest at mid-length, abruptly narrowed posterior widest point, with short, almost faint median sulcus and two lateral sulci. Lateral humps distinct, each bearing marginal tubercle. Disc with two small antebasal thorns arising from minute tubercles and separated by impression, two pairs of laterobasal and one pair of lateral foveae. Lateral margins with acute denticle at widest point. Hypomera smooth, paranotal ridge entire. Elytra moderately convex dorsally, about in plan with pro-



43



44



45



46

FIGS 43 to 46

43 and 44: *Coryphomobatus frater* gen. n., sp. n., female abdominal segment 5, ventral (43) and lateral (44) views, scale bar = 0.2 mm; 45 and 46: *Coryphomus adventus* sp. n., aedeagus in ventral (45) and lateral (46) views, scale bar = 0.1 mm.

notum, above plan of abdomen, moderately inclined toward apical margin, broadly rounded laterally, combined much wider than long; about 1.5 times as long as pronotum; about as long as combined length of tergites 1 to 3. Each elytron with sutural, discal and lateral striae and three basal foveae; subhumeral fovea lacking. Discal striae reaching to middle third of discal length; lateral striae almost reaching line of humeral protuberances, throughout parallel to margins; humeral protuberance distinct, rounded. Metasternum strongly convex, throughout punctate and pubescent, with median impression narrow and shallow; lateral metasternal foveae fairly close, lying posterior metasternal process, smaller than interval between them. Apical metasternal process prominent, narrow, bilobed. Legs slender. Femora curved, strongly narrowed basally, weakly narrowed apically. Tibiae slightly curved, thickened posterior mid-length, near apex narrowed, lacking erect or longer setae, with dense, robust pubescence on mesal side of apical third or two fifth. Tarsi slender, with segments 2 and 3 about equally long. Abdomen with 5 tergites exposed in dorsal view, gradually narrowed apically. Tergites 1 to 3 almost in same plan, following two tergites inclined. Tergite 1 about as long as tergites 2 and 3 combined, impressed basally, lacking discal carinae, with inner and outer lateral carinae not raised and not reaching apical margin, and two pairs of basolateral foveae. Tergites 2 and 3 similar in length, lacking foveae, much shorter than tergite 1, slightly shorter than tergite 4, with short lateral carinae. Sternite 1 with two basomedian foveae lying posterior intercoxal process and two pairs of basolateral foveae; lacking carinae. Following sternites lacking foveae.

Male characters. Metafemora strongly widened toward middle, from middle part to apex gradually narrowed, at apex much wider than at base; widest part of femora with dorsal side flattened. Apicodorsal portion of metatibiae abruptly swollen to form a conspicuous tubercle (Fig. 41), with mesal ridge inclined toward base. Aedeagus (Figs 45, 46) weakly sclerotized, flat, with large ventral diaphragm, ventral process bearing long subapical seta, dorsal process articulated, acute at apex.

Habitat. The specimens were found in sieved rotten logs of coconut palms. The metathoracic wings are well developed in both sexes indicating easy dispersion.

Comments. This species resembles *C. debeckeri* Leleup from Tanzania by the abdominal tergite 1 lacking discal carinae and the pronotum having a single pair of discal denticles. It differs from *C. debeckeri* by the elytra with three basal foveae, and from all members of *Coryphomus* by the male characters, in particular by the dorso-apically swollen metafemora, similar to those in *Eleodimerus* Jeannel.

Coryphomobatrus gen. n.

Fig. 47

Type species: *Coryphomobatrus frater* sp. n. Gender: masculine.

Etymology: derived from the generic names *Coryphomodes* and *Batrissus*.

Description. Habitus as Fig. 47. Body convex, 2.8-3.0 mm long. Punctuation mostly very fine and sparse. Pubescence long.

Head suboval, with eyes wider than long. Vertex with median hump large, well delimited by vertexal foveae and deep semicircular sulcus. Median vertexal carina well developed. Antennal fossae widely distant. Antennal tubercles distinct, gradually inflecting toward midline of interantennal bridge. Interantennal bridge and fronto-

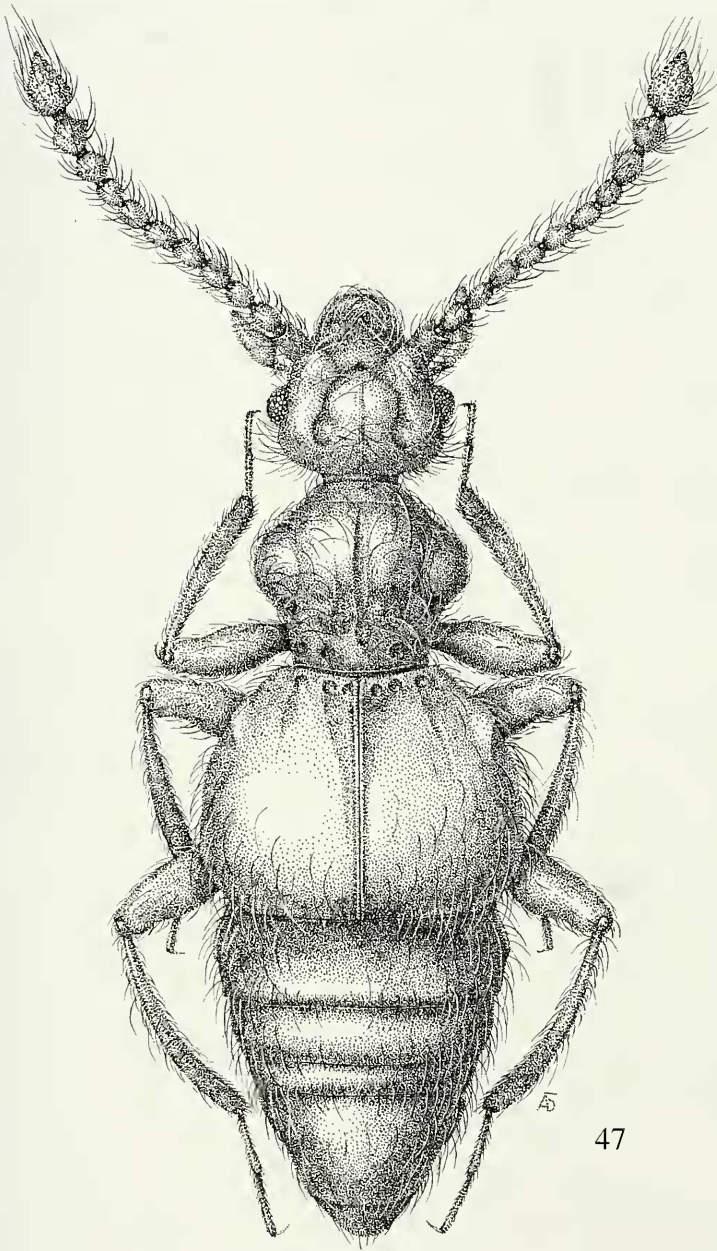


FIG. 47
Coryphomobatrus frater gen. n., sp. n.

clypeus not separated, wide, almost in same plan, distinct from above. Lateral frontal foveae present, open laterally. Areas posterior antennal tubercles horizontal, convex laterally. Mandibular-ocular carinae bifid, with upper branch curved dorsally distant from eyes margin, lower branch reaching eye margin. Eyes with small facets. Tempora long, evenly convex. Occipital margin moderately raised above plan of neck, convex. Postgenae with perpendicular, long and sparse setae. Gular area not swollen, slightly inclined toward neck. Gular foveae in very deep foveiform impression. Neck with mediodorsal carina.

Antennae moderately long. Scape and pedicel subcylindrical, apical angles of scape not expanded and lacking glandular opening; segments 3 to 7 similar to pedicel. Club distinctly 3-segmented. Maxillary palpi with segment 2 curved and gradually thickened toward apex; segment 3 short, narrowed mesally, segment 4 without basal stalk, gradually narrowed apically.

Pronotum cordiform, about as long as wide, strongly convex, strongly narrowed anterior and posterior lateral humps, raising high above plan of head, with median and two lateral sulci, pair of robust antebasal tubercles, basomedian and two admesal carinae, two pairs of inner basolateral foveae, one pair of outer basolateral foveae and one pair of antebasal foveae. Lateral humps large, convex, lacking marginal denticles. Paranotal ridge strongly arcuate, not shortened.

Elytra convex dorsally and laterally, raising above plan of pronotum and abdomen, longer and much wider than pronotum, steeply inclined toward apical margin, each with three basal foveae, deep sutural, one discal and one lateral stria; subhumeral fovea absent. Base raised, fold-like above foveae.

Mesosternum with median foveae distinctly separated. Anterior forks of lateral mesosternal foveae as long as but narrower than posterior forks. Metasternum deeply impressed in middle, with lateral metasternal foveae close, in common impression posterior metasternal process.

Legs long. Femora straight, swollen in large middle part. Tibiae slender, with long, erect pubescence. Tarsi slender, with segments 2 and 3 about equally long.

Abdomen convex, longer than elytra, with 5 tergites exposed. Tergite 1 comparatively short, parallel-sided, impressed at base, raising toward apex, with pair of laterobasal foveae, two pairs of mediobasal foveae at each side of long discal carinae. Outer and inner marginal carinae of tergite 1 not raised, outer short, hardly reaching apical third of tergite, inner extending to apical margin. Tergites 2 and 3 similar in size, parallel-sided, combined about as long as tergite 1, each with three pairs of basal foveae. Mesal part of tergite 2 horizontal, that of tergite 3 slightly inclined posteriorly. Tergite 4 conspicuously large, longer than tergite 1, inclined posteriorly. Tergite 5 prominent. Sternite 1 with two deep, basoadmedian and two large, basolateral impressions covered by pubescence; six basal foveae lying at each end of basal impressions. Sternites 2 and 3 each with one pair of lateral foveae.

Male secondary sexual characters affecting legs and abdominal sternites. Aedeagus complex, strongly sclerotized, distal process of median lobe in same plan as basal bulb, bearing slender apophysis and modified setiform sensilla.

Habitats. Moist litter, in sub-montane evergreen forest zone.

Distribution. Sri Lanka.

Comments. *Coryphomobatrus* shares many characters with *Tribasodema* Jeannel, *Batrisodiola* Jeannel, *Veddabatrus* gen. n., *Tribasodites* Jeannel, and *Coryphomodes* Jeannel (see comments under *Veddabatrus*). In addition to their habitus, members of these genera are similar in having wide, moderately inclined frontoclypeus, long tempora, mesal vertexal hump, pronotum with acute antebasal tubercles or thorns, one mesal sulcus and one pair of lateral sulci, and each elytron with three basal foveae. *Coryphomobatrus* may be distinguished from these genera by the strongly enlarged abdominal tergite 4. This new genus differs from *Batrisodiola*, erroneously described as having only two basal foveae on each elytron (Jeannel, 1960b), by the presence of pronotal carinae anterior to antebasal tubercles, the absence of subhumeral foveae and the aberrant type of the aedeagus. *Batrisodiola* has the tergite 1 with marginal and discal carinae similar to those in *Coryphomobatrus* but the tergite 4 almost perpendicular to the body axis, about as long as two thirds of tergite 1. *Coryphomodes*, with tergite 1 comparatively short, much shorter than tergites 2 and 3 combined, shares the pattern of abdominal carinae with *Coryphomobatrus* and *Batrisodiola*. It may be separated from these two genera also by the flat elytra and by the lateral margin of pronotal humps bearing a denticle. *Tribasodema*, that lacks discal carinae on abdominal tergite 1, possesses pronotum with two pairs of acute discal tubercles and one pair of additional sulci.

Coryphomobatrus frater sp. n.

Figs 39, 40, 43, 44, 47

Holotype ♂: SRI LANKA: UVA PROV.: Haputale, 1350m, 23.I.70, ExpG # 19a, forest litter in ravine (MHNG).

Paratypes: SRI LANKA: UVA PROV.: same data as holotype, 3 ♀ (MHNG, PCSK).

Description. Length 2.8-3.0 mm. Punctuation very fine. Pubescence semi-erect on head and pronotum, erect on elytra, recumbent on abdomen. Abdomen with several particular, long setae. Head slightly longer than wide (ratio 48/45), with eyes distinctly wider than long. Vertexal hump raising above plan of antennal tubercles, almost horizontal in mid-line, convex and inclined anteriorly and laterally. Mesal carina robust, extending up to anterior section of semicircular sulcus. Lateral frontal foveae small, open laterally. Frontoclypeus with very dense, irregular punctuation and low, inverted Y-shaped carina (faint in 2 females). Eyes large, prominent, and multifaceted. Tempora in male slightly less than twice as long as eyes, in female twice as long as eyes in dorsal view. Antennal segments 3 to 7 subequal, about as long and wide as pedicel; segment 8 slightly shorter than segment 7; segment 9 elongate; segment 10 as long as segment 9, almost as wide as long; segment 11 comparatively short, 1.5 times as long as wide. Pronotum about as long as wide, much longer than head (ratio 60/48), wider than head with eyes, at widest point 1.5 times as wide as at base. Mesal sulcus widened at base, touching basomedian carina, extending up to anterior fourth of disc. Antebasal tubercles acute, pointed dorsally. Median sulcus in impressed mesal portion, extending up to anterior fifth of pronotum. Admesal ridges low, short, undulate, lacking denticles. Elytra with adsutural areas raised; humeral protuberances distinct, rounded; discal striae reaching slightly posterior mid-length of

disc. Protibiae and mesotibiae slightly arcuate. Mesotibiae flattened and bearing dense, short, robust setae on anterior and posterior sides of apical third. Metatibiae straight and evenly slender in basal half, curved and thickened in apical half, with dense, robust setae on mesal side of apical half. Abdomen with tergite 4 as long as combined length of tergite 1 and half of tergite 2 (male), or almost as long as combined length of tergites 1 and 2 (female). Discal carinae of tergite 1 as long as one third of tergal length.

Male characters. Mesotibiae with basomesal margin extended to form a lobe. Tergite 5 subtriangular, with apical margin thickened, folded lateroapically, emarginate apically. Sternite 2 flattened in middle part, with small, medioapical lobe raising ventrally. Middle parts of sternites 3 and 4 transversally swollen. Sternite 5 with large mesal impression deepest at sternal basis and with medioapical lobe, thickened apically to form circular surface perpendicular to abdominal axis. Aedeagus (Figs 39, 40) elongate. Median lobe with small process arising from left edge of ventral side, slender, sinuate apophysis arising from dorsal side of basal bulb, and large, complex apical portion bearing three processes. Ventral process expanded by narrow apophysis with two terminal, flat setae, dorsal process with subapical, strongly curved apophysis bearing minute denticles at widest point.

Female characters. Tergite 5 prominent, with apicoventral side flat, strongly sclerotized, conspicuously sculptured and pubescent. Sternite 5 with medio-apical process notched in middle (Figs 43, 44).

Nesiotomina Jeannel

Fig. 48

Nesiotomina Jeannel, 1961: 431; type species: *Batrissus spinicollis* Motschulsky, 1858.

Description. Habitus as fig. 48. Body slender, 1.2–2.0 mm long. Punctuation conspicuously coarse and dense on elytra, fine and sparse on pronotum and abdomen. Pubescence long, erect or semi-erect on pronotum and elytra, semi-erect or recumbent on abdomen.

Head about as long as wide or wider than long, about as wide as pronotum. Vertex moderately convex, with occipital margin rounded. Frontal lobe gradually inclined. Vertexal sulci broadly semicircular, joined to vertexal foveae, curved at interantennal faint bridge. Antennal tubercles distinctly raised. Lateral frontal foveae absent. Eyes usually small, prominent, not notched, with minute facets, anterior eyes margin about at mid-length of head. Tempora distinct, vertical. Surface above eyes vertical. Ocular-mandibular carina reaching eye margin. Venter swollen, lacking carina, transversely impressed posterior mentum. Postgenae with erect setae. Gular foveae close, in common impression. Ventral pubescence short and recumbent, on lateroposterior areas fairly long and erect.

Antennal scape elongate, subcylindrical, slightly asymmetrical, with apical angles equally prominent. Pedicel much smaller than scape, symmetrical, about as long as wide or elongate. Antennal segments 3 to 7 moniliform. Segment 8 similar to segment 7, or larger and asymmetrical. Segments 9 to 11 forming distinct club. Maxillary palpi moderately long; segment 3 small, about as long as wide, widened mesally, segment 4 wide basally, lacking stalk.

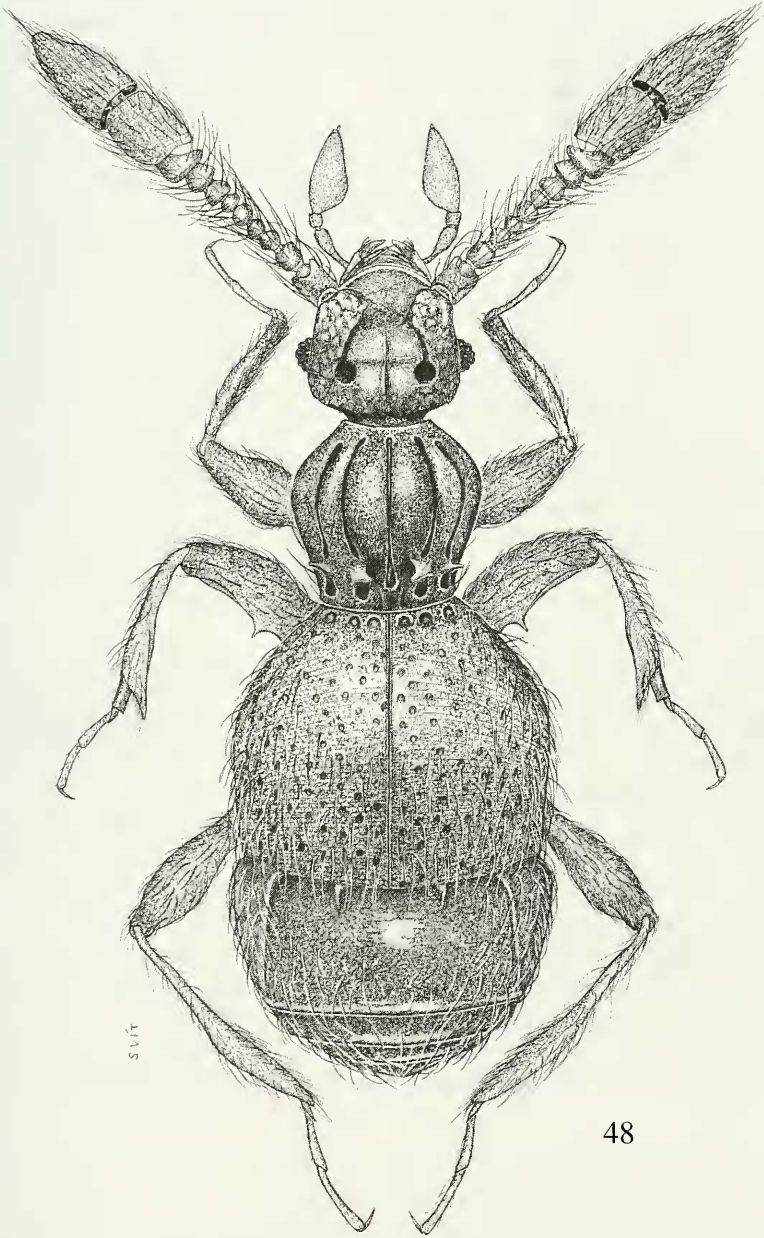


FIG. 48
Nesiotomina bellax sp. n.

Pronotum convex, raised slightly above plan of head. Disc with 5 longitudinal discal sulci and 6 smooth, basal foveae. Lateral pair of basal foveae not visible from above. Antebasal transverse ridge interrupted in middle, with two pairs of thorns arising each near basal end of lateral sulci. Lateral protuberances distinct. Additional ventrolateral sulci delimiting from below lateral protuberances. Hypomerall sulcus oblique at each side of prosternum. Hypomera indistinctly delimited.

Elytra convex, raised notably above plan of pronotum, arcuate laterally, each with three basal and one subhumeral foveae. Sutural and discal striae absent. Lateral carina well developed, joined to subhumeral fovea. Metathoracic wings reduced.

Median mesosternal foveae separated. Lateral mesosternal foveae with anterior forks almost as large as posterior forks. Metasternum strongly swollen, with apico-medial impression; apical metasternal process prominent, notched. Mesocoxal process of metasternum triangular. Lateral metasternal foveae in small impressions, with diameters about as large as interval between them.

Legs slender. Tarsal segments 2 and 3 similar in length.

Abdomen with four tergites visible in dorsal view. Tergite 1 large, longer than following tergites combined, with two pairs of basal foveae, basal transverse carina, entire lateral and marginal carinae. Following tergites with inconspicuous marginal carinae and one pair of minute, smooth, lateral foveae. Abdomen ventrally swollen. Sternite 1 large, with pair of foveae below basomedial process, pair of basodiscal and pair of basolateral foveae. Following sternites lacking foveae.

Male secondary sexual characters affecting antennal segments 7 to 11, with club segments strongly modified, and present eventually on elytra and legs. Eyes in males larger than in females, contours of male elytra eventually different from those in females. Aedeagus slightly sclerotized, elongate, flat, lacking sensilla, with distal process of median lobe narrow.

Habitat. Moist forest litter in wet evergreen lowland to montane ecosystem. Only one species, *N. bellax*, occurs in dry Chloroxylon ecosystem and is widely distributed.

Distribution. Sri Lanka and South India (the Indian record of a probably new species from Ponmuti Hill Resort, Kerala (PCPH) is unpublished).

Comments. Males of *Nesiotomina* exhibit antennal club strongly modified, with a glandular socle, conspicuously similar to that in members of the Afrotropical *Ambicocerina* (Leleup, 1970). *Nesiotomina* differs drastically from *Ambicocerina* by the pronotum that is carinate in *Ambicocerina*, and by the elytra lacking sutural striae.

KEY TO SPECIES OF *NESIOTOMINA* OF SRI LANKA

- | | | |
|---|---|--|
| 1 | Pronotum with tomentose stripes covering outer lateral sulci. Vertex convex posteriorly, without median fovea or sulcus | <i>N. spinicollis</i>
(Motschulsky) |
| - | Pronotum without tomentose stripes | 2 |
| 2 | Antennal segment 3 distinctly elongate | 3 |

- Antennal segment 3 as wide as long or wider than long 4
- 3 Pronotum with admesal intervals strongly narrowed anteriorly, narrower than anterior section of intervals between inner and outer lateral sulci. Antennal segments 4 and 6 each about as long as wide *N. transjugata* sp. n.
- Pronotum with admesal intervals weakly narrowed anteriorly, wider than anterior sections of intervals between inner and outer lateral sulci *N. longicollis* Jeannel
- 4 Vertex with median fovea or sulcus touching anterior end of median carina . 5
- Vertex without median fovea or sulcus 9
- 5 Vertex with median fovea not or slightly elongate, lying between dorsal tentorial foveae and not or slightly extending anterior to line of vertexal foveae 6
- Vertex with median sulcus extending far anterior to line of vertexal foveae . . 8
- 6 Lateral protuberances of pronotum impressed dorsobasally. Male mesotibiae without ventral tooth; antennal segment 9 strongly enlarged and modified, with upper side flattened 7
- Lateral protuberances of pronotum not impressed dorsally. Male mesotibiae with prominent tooth on ventral side. Male antennal segment 9 small, moderately modified, with upper side not flattened (Fig. 54) *N. foveifrons* sp. n.
- 7 Lateral portions of vertex very finely punctate above eyes. Outer sides of male antennal segments 9 and 10 equally long (Fig. 52). Male eyes very small, with 12 to 14 facets *N. difficilis* sp. n.
- Lateral portions of vertex coarsely punctate above eyes. Male antennal segment 9 much longer than segment 10 (Fig. 49). Male eyes large, multifaceted *N. appendiculata* sp. n.
- 8 Median sulcus of vertex extended to, or almost to, semicircular sulcus. Male profemora not thickened, similar to mesofemora *N. perbrincki* sp. n.
- Median sulcus of vertex shorter, ending fairly far from semicircular sulcus. Male profemora strongly thickened, much thicker than mesofemora *N. femoralis* sp. n.
- 9 Antennal segments 3 to 5 each about as long as wide. Male antennal segments 7 and 8 conspicuously widened (Fig. 51) *N. carinifrons* sp. n.
- Antennal segments 3 to 5 each notably wider than long. Male antennal segments 7 and 8 not conspicuously widened 10
- 10 Median vertexal carina extending to semicircular sulcus. Inner side of male mesotibiae strongly widened from base to middle, abruptly narrowed posterior middle, lacking prominent tooth *N. tibialis* sp. n.
- Median vertexal carina ending notably posterior semicircular sulcus. Inner side of male mesotibiae slightly arcuate, not widened; upper side of male mesotibiae with prominent, subapical tooth *N. bellax* sp. n.

Nesiotomina appendiculata sp. n.

Figs 49, 61, 62

Holotype ♂: SRI LANKA: UVA PROV.: Diyaluma Falls, ca. 450m, 25.I.70, litter at waterfalls. ExpG # 26 (MHNG).

Description. Length 1.25 mm. Head with lateral contours subparallel, hardly narrowed anteriorly in dorsal view. Frontoclypeus strongly inclined. Punctuation coarse and dense posterior and between antennal tubercles, and on frontoclypeus. Vertexal punctuation sparse and very fine, almost obsolete. Vertex with central, slightly elongate median fovea between vertexal foveae, median carina extended from median fovea to occiput. Tempora rounded. Antennal segments 3 to 5 equally long, segment 4 slightly narrower than segments 3 or 5; segment 6 slightly smaller than preceding segment. Pronotum 0.30 mm long, 0.31 mm wide. Disc with mesal and inner lateral sulci almost equally deep and wide; inner and outer lateral sulci parallel, admesal intervals wider than intervals between inner and outer lateral sulci and almost flat. Lateral protuberances convex, with fairly large dorsobasal impression; outer lateral sulci not covered by pubescence. Inner antebasal thorns pointed obliquely backward and slightly curved. Abdominal pubescence recumbent.

Male characters. Eyes prominent, multifaceted, largest diameter of eyes about as interval between eyes and upper head margins, smaller than temporal length. Antennal segments 7 and 8 slightly widened, asymmetrical, narrowed at inner side. Segments 9 to 11 (Figs 49) strongly enlarged and asymmetrical. Segment 9 flattened dorsally, with dorsal side densely punctate, inner side obliquely truncate and smooth up to outer apical angles. Segment 10 shorter than segment 9, with outer side as long as half of outer side of segment 9, becoming longer toward inner side, inner side deeply notched. Segment 11 with large, curved, basal process extending basally anterior segment 10 and almost covering its excavation; tip of process narrow and curved. Humeral margins of elytra almost oblique, humeral protuberances low. Prolegs with trochanters slightly prominent, femora swollen and slightly asymmetrical (similar as in Fig. 83). Mesolegs and metalegs without obvious sexual characters. Metatibiae slender in basal half, distinctly curved and swollen in apical half. Aedeagus (Figs 61, 62) with distal process of median lobe sinuate laterally and slightly notched at apex in dorsal view, curved, very narrow and bidentate at apex in lateral view.

Comments. This species is similar, in exoskeletal characters and notably by the male antennae, to *N. difficilis*, *N. perbrincki* and *N. femoralis*. It may be distinguished from them by the long vertexal sulcus, the pattern of the vertexal punctuation and the multifaceted eyes in male.

Nesiotomina bellax sp. n.

Figs 48, 50, 63, 64, 86

Holotype ♂: SRI LANKA: UVA PROV.: Diyaluma Falls, ca 400m, 23.I.70, forest downstream waterfalls, ExpG # 21 (MHNG).

Paratypes: SRI LANKA: UVA PROV.: same data as holotype, 3 ♂, 10 ♀ (MHNG, PCSK); same but 450 m, 25.I.70, ExpG # 26, 2 ♂, 7 ♀; Diyaluma Falls, 600m, 17.I.65. R. Mussard, 2 ♂ (MHNG); 6 mls N Monaragala, 13.II.70, ExpG # 64, forest litter, 2 ♂, 2 ♀ (MHNG); Westminster Abbey, 25 mls ESE Bibile, 7.III.62, ExpL # 119:III. 1 ♂, 2 ♀ (MZLU); CENTRAL

PROV.: Hasalaka nr. Weragamtota, 250m, 11.II.70, ExpG # 59, forest litter, 1 ♂ (MHNG); Weragamtota, 300m, 2.I.64, R. Mussard, 2 ♂, 1 ♀ (MHNG); Mululla, 600m, 4.II.70, ExpG # 45, forest above Mululla, 1 ♂, 6 ♀ (MHNG); Kandy, 700m, 19.I.65, R. Mussard, 3 ♀ (MHNG); Madugoda, 1200 and 1500m, 28 and 30.I.64, R. Mussard, 17 ♂, 26 ♀ (MHNG, PCSK); SOUTHERN PROV.: Tissamaharama, 22.I.64, R. Mussard, 1 ♀ (MHNG); SABAGARAMUWA PROV.: Karagal Oya at 1900ft 3mls ENE Belihul Oya, 2.III.62, Expl # 110, 1 ♂ (MZLU).

Description. Length 1.45-1.60 mm. With external characters very similar to *N. tibialis* and *N. transjugata*. Head with frontoclypeal punctation finer than punctation posterior antennal tubercles, coarser than that on middle portion of vertex; median vertexal crest reaching up to or anterior to line of vertexal foveae, ending distant semicircular sulcus. Antennal segments 3 to 6 each wider than long; segment 5 slightly larger than segments 4 and 6. Pronotum 0.36-0.37 mm long and wide, with admesal intervals about as wide as intervals between inner and outer lateral sulci. Pubescence along outer lateral sulci as in *N. tibialis*. Median metasternal impression large, fairly shallow.

Male characters. Eyes multifaceted, with largest diameter distinctly exceeding interval between eye and upper head margin and temporal length. Antennal segments 7 and 8 slightly larger than segment 5; segment 8 slightly asymmetrical, with outer side longer than inner side. Club segments (Fig. 50) similar to those in *N. transjugata* and *N. tibialis*, segment 10 notably larger, segment 11 with sharply delimited, slightly prominent, nude, basoventral area. Protrochanters with minute tubercle in middle of ventral margin. Profemora swollen. Mesotrochanters with minute tubercle near base. Mesofemora impressed mesally and bearing large, slightly oblique tooth on upper posterior margin, at distal end of basal third of femoral length (Fig. 86). Mesotibiae flattened mesally, gradually widened toward apical fifth (lateral view), with robust tooth raising obliquely just anterior to apical fifth. Aedeagus (Figs 63, 64) with median lobe widened ventrally and abruptly curved at apex; internal sac curved apico-ventrally.

Female characters. Eyes small, with about 12 facets, largest eye diameter about as temporal length, exceeding interval between eye and upper head margin.

Comments. This species may be distinguished from its congeners by the vertex lacking median fovea or sulcus, in combination with the presence of a short vertexal carina and the male mesotibiae bearing a prominent, subapical tooth.

Nesiotomina carinifrons sp. n.

Figs 51, 65, 66

Holotype ♂: SRI LANKA: CENTRAL PROV.: Kandy, ca 600m, 15.I.70, ExpG # 3c (MHNG).

Paratypes: SRI LANKA: CENTRAL PROV.: Madugoda, 30.I.64, 1200m, R. Mussard, 1 ♂ (MHNG); Kandy, Udawattekele Sanctuary, 600m, 2.I.70, ExpG # 81, 1 ♂ (MHNG).

Description. Length 1.55-1.65 mm. Head with lateral contours converging anteriorly. Frontoclypeus strongly inclined. Punctation coarse and dense on and posterior antennal tubercles, becoming fine posterior line of vertexal foveae, moderately coarse on frontoclypeus, very fine on large middle portion of vertex. Vertex slightly convex, not raised posteriorly, with median carina extended from occiput anterior to line of vertexal foveae, not reaching up to semicircular sulcus. Tempora

subangulate. Antennal segments 3 to 6 equally long, segments 5 and 6 distinctly larger than segments 3 and 4, segment 6 slightly asymmetrical. Pronotum 0.37 mm long, 0.35-0.36 mm wide. Mesal and inner lateral sulci parallel and similar. Admesal intervals and intervals between inner and outer lateral sulci slightly convex, about equally wide. Lateral humps convex, not impressed on dorsal side, with dense row of fine, short, erect setae parallel to outer lateral sulci. Inner antebasal thorns almost perpendicular to pronotal axis, not curved. Outer antebasal thorns pointed laterally. Elytra with humeral areas arcuate; humeral protuberances obsolete. Metasternal impression deep and small, almost foveiform. Abdominal pubescence recumbent.

Male characters. Eyes multifaceted, much longer than tempora, reaching almost upper head margin. Antennal segments 7 and 8 strongly widened, asymmetrical, equally long, segment 8 slightly wider than segment 7; segment 9 similar to segment 8 but longer; segment 10 strongly enlarged, with basoventral cavity; segment 11 large, impressed ventrally, with basoventral lobe and prominent glandular socle (Fig. 51). Prolegs without obvious sexual characters. Mesotrochanters with conspicuous, blunt process at apical, posterior angle. Mesofemora strongly narrowed near base, with several short, strong setae inserted on posterior femoral side. Posterior, narrowed area of mesofemora delimited by angle bearing several robust, short, oblique setae. Mesotibiae with small apical denticle. Aedeagus (Figs 65, 66) with distal process of median lobe strongly arcuate dorsoventrally, expanded ventrally and more sclerotized on right side than on left side, with narrow, lobed, blunt tip. Internal sac comparatively narrow, curved apically.

Comments. This species may be distinguished by the vertex lacking median fovea or sulcus in combination with the shape of the very wide antennal segments 7 and 8 in male.

Nesiotomina difficilis sp. n.

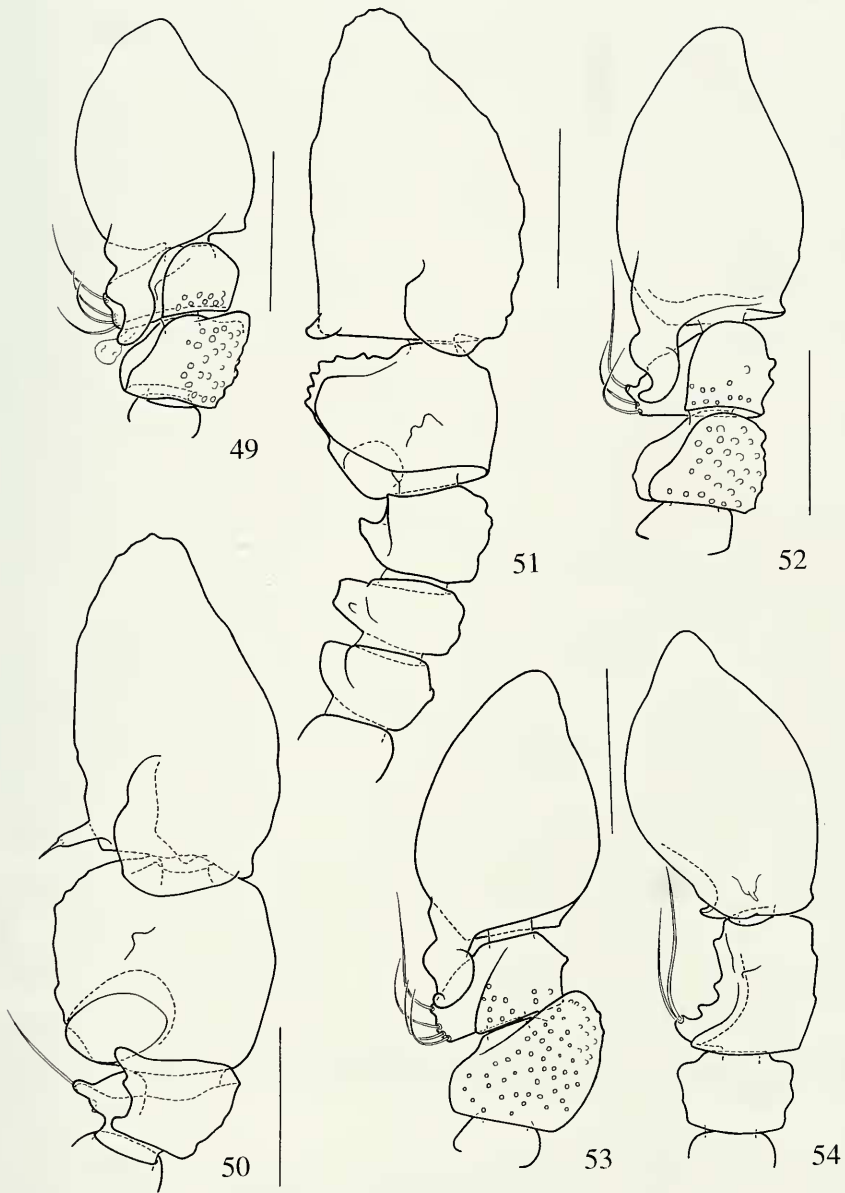
Figs 52, 67, 68

Holotype ♂: SRI LANKA: CENTRAL PROV.: Madugoda, 1500m, 30.I.64, R. Mussard (MHNG).

Paratypes: SRI LANKA: CENTRAL PROV.: same data as holotype, 3 ♂, 20 ♀ (MHNG, PCSK).

Description. Length 1.40-1.45 mm. Most characters as in *N. appendiculata*, but body larger, pronotum slightly wider (0.33-0.34 mm), eyes notably smaller, with about 12 – 14 facets in male, 8 facets in female, largest eyes diameter smaller than interval between eye margin and upper head margin, and less than half of temporal length. Antennal club as Fig. 52; segment 9 with inner side rounded; segment 10 longer than segment 9. Humeral margins of elytra arcuate in both sexes, humeral protuberance inconspicuous in male, absent from female. Metasternum with shallow, medio-apical impression. Profemora swollen, as Fig. 83. Aedeagus as Figs 67, 68, with distal process of median lobe wide, very weakly sclerotized, emarginate latero-apically in dorsal view, bilobed apically in lateral view; internal sac indistinct.

Comments. This species may be distinguished from the very similar *N. appendiculata* by the small eyes in both sexes in combination with the shape of the male antennal segments 9 and 10 (see comments under *N. appendiculata*).



FIGS 49 to 54: *Nesiotomina* Jeannel, male antennal club

49: *N. appendiculata* sp. nov.; 50: *N. bellax* sp. n.; 51: *N. carinifrons* sp. n., 52: *N. difficilis* sp. n., 53: *N. femoralis* sp. n.; 54: *N. foveifrons* sp. n. Scale bars = 0.1 mm.

Nesiotomina femoralis sp. n.

Figs 53, 69, 70

Holotype ♂: SRI LANKA: SABARAGAMUWA PROV.: stream at 2500ft 5 mls NNW Belangoda, 22.II.62 ExpL # 96 (MZLU).

Paratypes: SRI LANKA: SABARAGAMUWA PROV.: same data as holotype, 3 ♂, 3 ♀ (MZLU, MHNG); Deerwood, Kuruwita 6 mls NNW Ratnapura, 16-21.II.62 ExpL # 90:III, indigenous forest, ravine with stream, 1 ♂, 1 ♀ (MZLU); same data but # 90:II:1, 1 ♂, 4 ♀ (MZLU, PCSK); 2 mls E Kalawana, 20.I.70, ExpG # 15, 2 ♂ (MHNG).

Description. Length 1.25-1.35 mm. Head contours subquadrate. Frontoclypeus strongly inclined. Punctuation coarse and dense on frontoclypeus, on and posterior antennal tubercles, very fine on vertex, above and posterior eyes. Vertex flattened, slightly convex posterior line of vertexal foveae. Median vertexal crest short, inconspicuous, extending from occiput almost to level of vertexal foveae and touching deep and long median sulcus. Median sulcus extending close to semicircular sulcus. Tempora rounded. Antennal segments 3 and 4 about equally large, each as long as large; segment 5 slightly larger than segment 4, about as long as wide; segment 6 about as segment 4. Pronotum 0.30-0.32 mm long, 0.32-0.34 mm wide. Inner and outer lateral sulci similar, admesal intervals slightly convex; intervals between inner and outer sulci somewhat flattened, narrower than admesal intervals; lateral humps convex, each with large dorsobasal impression. Inner antebasal thorns strongly oblique, orientated backward, not curved. Elytra with humeral areas arcuate in both sexes. Metasternum with median impression elongate, becoming gradually deeper apically, apicomedian area conspicuously oblique. Abdominal pubescence recumbent.

Male characters. Eyes small, with 9 to 11 facets; largest eye diameter about as interval between upper eye margin and upper head margin, much smaller than temporal length. Antennal segment 7 slightly asymmetrical, slightly wider than segment 5; segment 8 shorter and wider than segment 7, with inner side asymmetrically narrowed; segment 9 large, strongly asymmetrical, flattened dorsally; segment 10 smaller than segment 9, with mesal side deeply incised; segment 11 with large basal process, finely carinate basal margin (Fig. 53). Humeral protuberance very small. Profemora strongly thickened. Protibiae and mesolegs lacking obvious sexual characters. Aedeagus (Figs 69, 70) with distal process of median lobe gradually widened, with lateral margin obtusely angulate near apex, tip broadly arcuate in ventral view, strongly arcuate in lateral view. Internal sac wide, lobed laterally.

Comments. See comments under *N. appendiculata*. *Nesiotomina femoralis* differs notably from resembling species by the thickened male profemora, in combination with the presence of a short vertexal sulcus.

Nesiotomina foveifrons sp. n.

Figs 54, 71, 72

Holotype ♂: SRI LANKA: CENTRAL PROV.: Madugoda, 1500 m, 28.I.64, R. Mussard (MHNG).

Paratypes: SRI LANKA: CENTRAL PROV.: same data as holotype, 2 ♂, 3 ♀ (MHNG).

Description. Length 1.25-1.35 mm. Head with lateral contours slightly converging anteriorly. Punctuation coarse and very dense posterior antennal tubercles, up to line of posterior eye margins, coarse but less dense on frontoclypeus, very fine on large central and posterior parts of vertex. Frontoclypeus strongly inclined. Posterior

part of vertex distinctly raised, with median carina conspicuous, extended from occiput to line of posterior margin of vertexal foveae. Median sulcus deep, short, extending from vertexal carina to line of anterior eyes margins, ending distant from semicircular sulcus. Tempora rounded. Antennal segments 3 to 8 each wider than long, segments 3, 4 and 6 about equally large, segments 5, 7 and 8 slightly larger. Pronotum 0.30-0.32 mm long, 0.32-0.34 mm wide. Mesal and inner lateral sulci similar; intervals between sulci convex. Lateral pronotal humps convex, not impressed on dorsal side, with pubescence as sparse as that on remainder of discus, lacking rows of erect setae along sulci. Inner antebasal thorns straight, pointed obliquely backwards. Abdominal pubescence semi-erect. Metasternal impression small, shallow, oval. Abdominal pubescence recumbent.

Male characters. Eyes large, multifaceted, largest eye diameter exceeding almost twice temporal length and about 3 times interval between eye and upper head margins. Humeral margins of elytra oblique, humeral protuberances distinct. Antennal segments 7 to 9 almost symmetrical; segment 9 small; segment 10 deeply notched on ventral side, with basal tubercle; segment 11 impressed ventrally, with small basal lobe; glandular socle inconspicuous, distant from basal margin (Fig. 54). Prolegs without obvious sexual characters. Mesotrochanters with minute tubercle on posterior side. Mesofemora slightly swollen, bearing small, triangular denticle situated at end of basal third of posterior side. Mesotibiae with small apical denticle. Aedeagus (Figs 71, 72) with distal process of median lobe narrow, slightly narrowed in ventral view, strongly narrowed in lateral view, abruptly bent in apical portion. Internal sac slender, well sclerotized, curved posterior middle, sinuate in ventral view, strongly arcuate and tapering in lateral view.

Female characters. Eyes small, largest eye diameter about as temporal length, smaller than interval between eye and upper head margins. Humeral margins of elytra rounded.

Comments. This species may be distinguished by the lateral pronotal protuberances convex dorsally, the short median sulcus of the vertex, the comparatively short antennal segment 3, and the small male antennal segment 9.

Nesiotomina longicollis Jeannel

Figs 55, 73, 74

Nesiotomina longicollis Jeannel, 1961: 432.

Type material. Holotype ♂, labelled: 464. Hatton 27.8.59, Pselap. (hand-written)/*Nesiotomina longicollis* m (hand-written by Jeannel) /*Nesiotomina longicollis* Jeannel Löbl & Kurbatov det. (MNHN).

Description. Length 1.7 mm. Head contours slightly pyriform. Punctuation very fine and sparse, but with few coarse punctures posterior antennal tubercles. Frontoclypeus moderately inclined. Vertex slightly convex, with long median carina extending from occiput about to line of anterior margins of vertexal foveae; median vertexal fovea or sulcus absent. Tempora subangulate. Antennal segments 3 to 6 elongate, segments 3, 4 and 6 subequal, segment 5 slightly larger. Pronotum 0.39 mm long, 0.37 mm wide. Mesal and inner lateral sulci similar. Admesal intervals and intervals between inner and outer lateral sulci strongly convex, latter narrower than

former. Lateral humps narrow, convex, not impressed on dorsal side, each with dense puncture row parallel to sulcus (likely bearing short and erect setae, but pubescence strongly damaged on both sides of pronotum). Inner antebasal thorns straight, long, pointed obliquely backward. Elytra with humeral margins oblique. Abdominal pubescence recumbent.

Male characters. Eyes small, multifaceted, with largest diameter about 1.5 times exceeding interval to upper head margins and slightly longer than half of temporal length. Antennal segments 7 and 8 symmetrical, segment 7 about as long as segment 3 and longer than wide; segment 8 shorter and wider than segment 7, wider than long, segment 9 comparatively small, hardly modified; segment 10 with deep ventral incision; segment 11 with basal lobe and glandular socle (Fig. 55). Elytra lacking humeral protuberances. Anterior margins of protochanters with flat, triangular, pointed denticle. Profemora with anterior side straight in dorsal view, abruptly narrowed near base, and bearing minute denticle delimiting apically narrowed portion. Mesolegs lacking obvious sexual characters. Aedeagus (Figs 73, 74) with distal process of median lobe and internal sac strongly arcuate and narrowed toward apex, tip of median lobe abruptly curved, forming transverse lobe.

Comments. This species may be distinguished by the elongate antennal segment 3 and the admesal intervals of the pronotum weakly narrowed anteriorly.

Nesiotomina perbrincki sp. n.

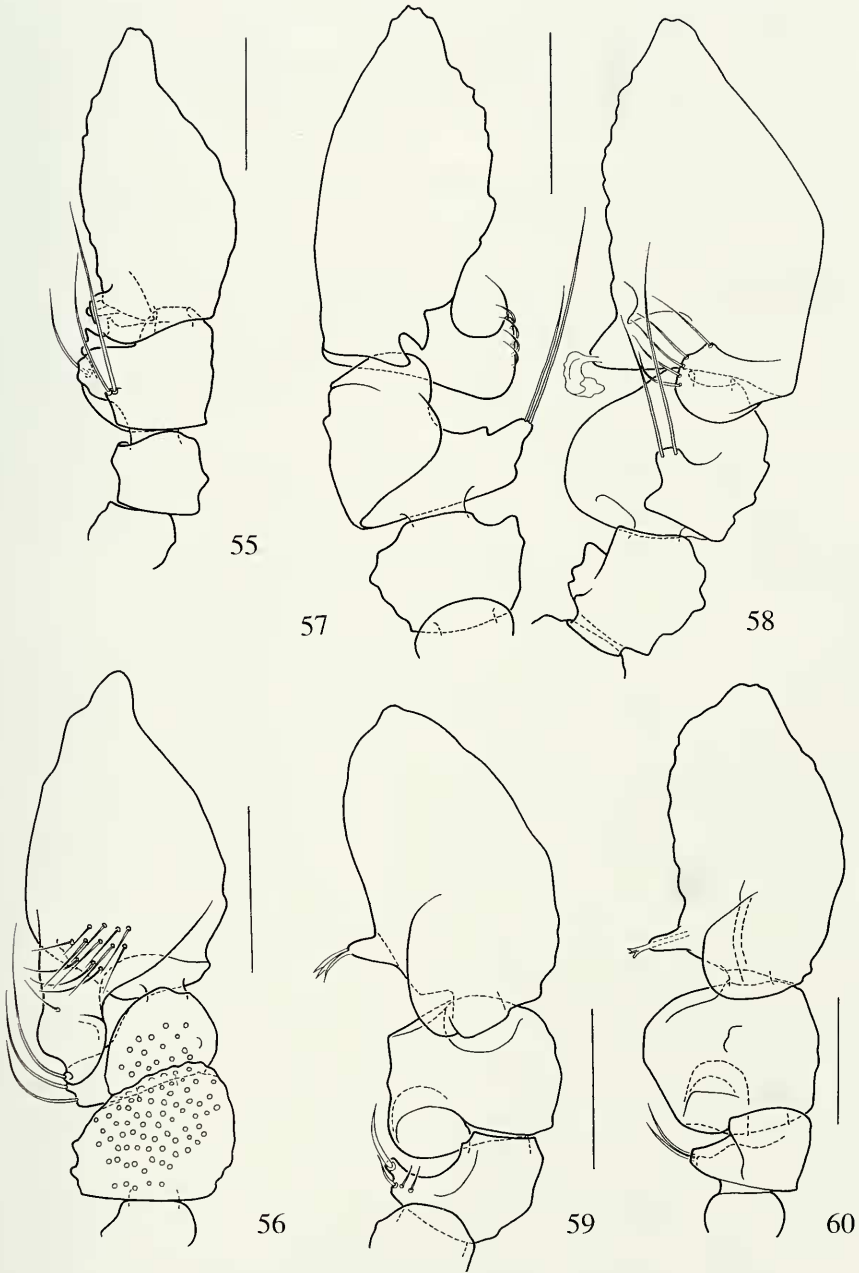
Figs 56, 75, 76

Holotype ♂: SRI LANKA: CENTRAL PROV.: Hatton, 1400m, 9.II.70, ExpG # 55a (MHNG).

Paratypes: SRI LANKA: CENTRAL PROV.: same data as holotype, 10 ♂, 10 ♀ (MHNG, PCSK); SABARAGAMUWA PROV.: Maratenna at 4500ft, 7 mls N Balangoda, 22.II.62, ExpL # 98, 2 ♂, 4 ♀ (MZLU, MHNG); SRI LANKA: Ceylon, Coll. Cl. Müller, 1 ♀ (ZSMC).

Description. Length 1.4-1.5 mm. Similar to *N. appendiculata* and *N. difficilis*, distinguished by: Head with median sulcus deep, extending from line of antennal tubercles up to raised posterior part of vertex, behind line of vertexal foveae. Vertexal carina slightly shorter than in *N. appendiculata* and *N. difficilis*, extended from median sulcus to occiput. Frontoclypeus moderately inclined. Eyes small and prominent. Antennal segments 3, 4 and 6 equally large, as long as wide; segment 5 distinctly larger than segment 3. Pronotum 0.30-0.31 mm long, 0.33-0.35 mm wide. Outer lateral sulci extended to form large impressions widened toward base; lateral protuberances convex dorsolaterally. Elytra with humeral margins oblique, humeral tubercles absent.

Male characters. Eyes small, with 9 to 12 facets, largest eye diameter smaller than interval to upper head margin and less than half of temporal length. Antennal segment 7 slightly enlarged. Antennal club as in Fig. 56, similar to that of *N. appendiculata*. Inner side of segment 9 rounded, segment 10 larger, with inner side more oblique, segment 11 impressed dorsobasally and with basal ridge. Legs lacking obvious sexual characters. Aedeagus (Figs 75, 76); median lobe widened apically, at apex very weakly sclerotized, trilobed in ventral view, curved in lateral view; inner sac hardly distinguishable, narrowed apically.



FIGS 55 to 60: *Nesiotomina* Jeannel, male antennal club

55: *N. longicollis* Jeannel; 56: *N. perbrincki* sp. n.; 57 and 58: *N. transjugata* sp. n.; 59: *N. tibialis* sp. n.; 60: *N. spinicollis* (Motschulsky). Scale bars = 0.1 mm.

Female characters. Eyes smaller than in male, with 6 or 7 facets. Humeral margins of elytra arcuate.

Comments. *Nesiotomina perbrincki* may be distinguished from similar species (see comments under *N. appendiculata*) by the long vertexal sulcus and the male profemora not thickened.

Nesiotomina spinicollis (Motschulsky, 1858)

Figs 60, 81, 82, 87

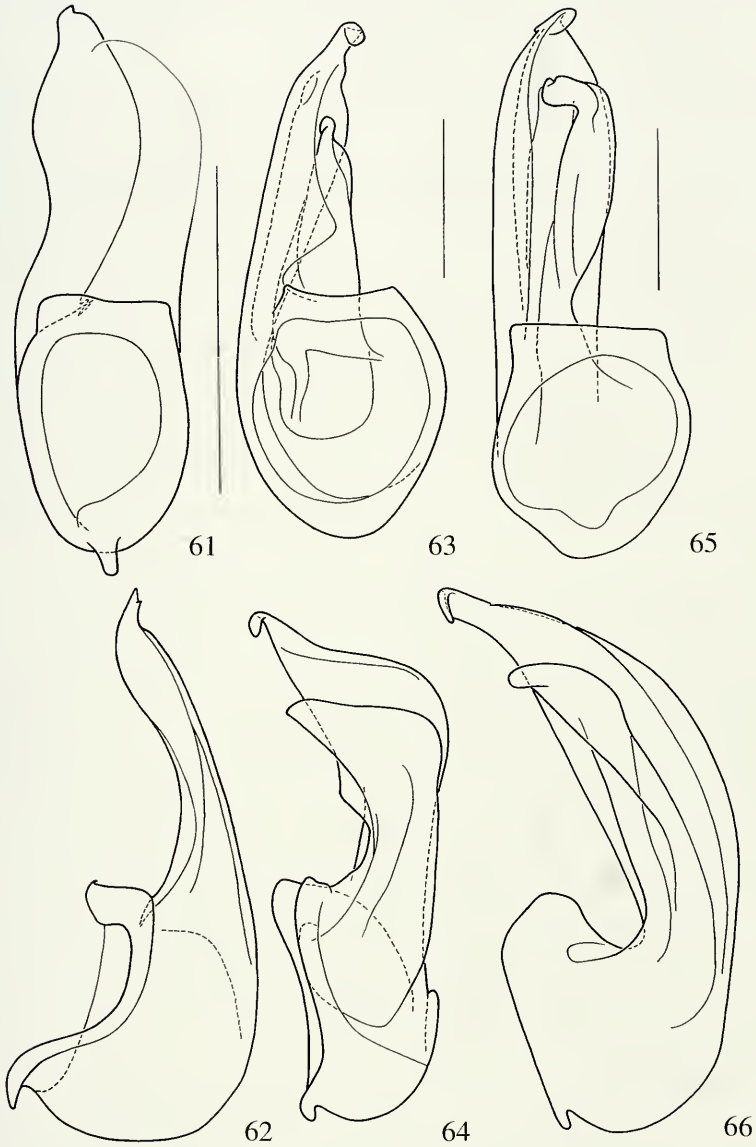
Batrisus spinicollis Motschulsky, 1858: 27.

Type material: SRI LANKA: CENTRAL PROV.: 1 ♀ labelled: Type (hand-written) /TYPUS (red) / *Batrisus spinicollis* Motsch. Nuva-Ellia Ceylon (hand-written original label /*Nesiotomina spinicollis* Motsch. Det. Löbl 1969 (ZMUM).

Additional material: SRI LANKA: CENTRAL PROV.: Hatton, 1400m, 9.II.70, ExpG # 55a 1 ♂, 11 ♀ (MHNG, PCSK); SABARAGAMUWA PROV.: Maratenna at 4500ft, 7 mls N Balangoda, 22.II.62, ExpL # 98, 5 ♂, 2 ♀ (MZLU, MHNG); SRI LANKA: Ceylon, Coll. Cl. Müller, 1 ♂, 2 ♀ (ZSMC).

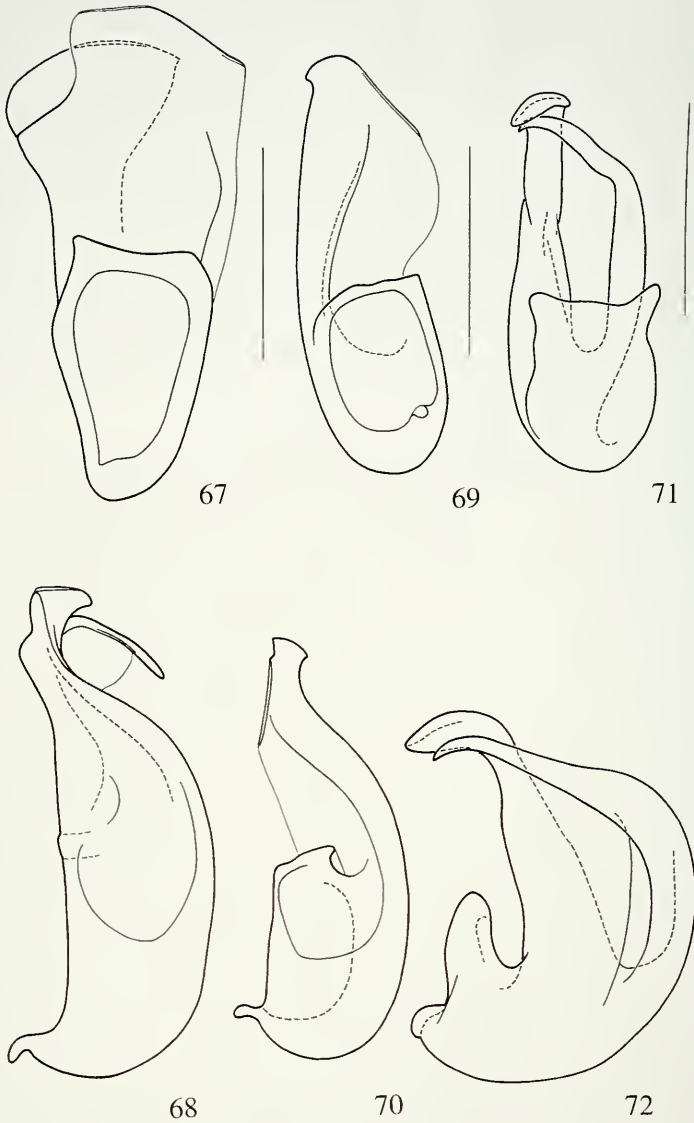
Description. Length 1.60-1.65 mm. Head in dorsal view gradually narrowed, with lateral contours oblique. Frontoclypeus raised above centre of semicircular sulcus, strongly inclined anteriorly. Punctuation coarse and dense posterior antennal tubercles and on anterior side of antennal tubercles, sparse and very fine on large remainder of frons and vertex. Vertex convex and swollen posterior line of vertexal foveae, with median carina extending from line of vertexal foveae up to occiput. Tempora subangulate. Antennae with segments 3 to 6 equally wide; segments 3 and 5 each about as long as wide, segments 4 and 6 shorter, wider than long. Pronotum 0.37 mm long and wide. Mesal and inner lateral sulci similar. Admesal sulcus intervals slightly convex, narrower than lateral intervals. Lateral intervals flat, oblique; outer lateral sulci completely covered by short, white, very dense pubescence forming compact tomentum. Lateral humps flattened dorsally, strongly inclined. Inner antebasal thorns slightly oblique, orientated dorso-apically. Metasternal impression small, elongate, becoming gradually deeper toward apex. Abdominal pubescence recumbent.

Male characters. Eyes large, strongly prominent, multifaceted. Largest eye diameter about 3 times as long as interval from eye margin to upper head margin and about twice as long as tempora. Antennae with segment 7 symmetrical, about as long as and wider than segment 5, distinctly wider than long; segment 8 as wide as but shorter than segment 7, slightly asymmetrical; segments 9 to 11 (Fig. 60) strongly modified; segment 9 short and wide, with mesal side strongly notched; segment 10 large, gradually narrowed toward mesal margin, with carinate distal margin, convex upper and outer sides, deep basal cavity on mesal side; segment 11 impressed basoventrally, and with large, basal lamina and straight glandular socle perpendicular to axis of segment. Humeral margins of elytra oblique, humeral protuberances distinct. Prolegs and metalegs without obvious sexual characters. Mesofemora asymmetrically flattened on inferior side and bearing prominent denticle raising from posterior margin. Mesotibiae (Fig. 87) with sharp tooth perpendicular to tibial axis, situated in middle of mesal side. Latter flattened in apical half and with additional, oblique, sharp tooth. Aedeagus (Figs 81, 82) with distal process of median lobe gradually narrowed and tip slightly curved in dorsal view, arcuate in lateral view; internal sac almost straight, gradually narrowed toward apex.



FIGS 61 to 66: *Nesiotomina* Jeannel, aedeagi

61 and 62: *N. appendiculata* sp. n., ventral (61) and lateral (62) views; 63 and 64: *N. bellax* sp. n., ventral (63) and lateral (64) views; 65 and 66: *N. carinifrons* sp. n., ventral (65) and lateral (66) views. Scale bars = 0.1 mm.



FIGS 67 to 72: *Nesiotomina* Jeannel, aedeagi

67 and 68: *N. difficilis* sp. n., ventral (67) and lateral (68) views; 69 and 70: *N. femoralis* sp. n., ventral (69) and lateral (70) views; 71 and 72: *N. foveifrons* sp. n., ventral (71) and lateral (72) views. Scale bars = 0.1 mm.

Comments. This species differs conspicuously from its congeners by the lateral sulci of pronotum covered by tomentose stripes.

Nesiotomina tibialis sp. n.

Figs 59, 79, 80, 84

Holotype ♂: SRI LANKA: CENTRAL PROV.: Kandy, env. 600m, 15.I.70, ExpG #3c (MHNG).

Paratypes: SRI LANKA: CENTRAL PROV.: same data as holotype, 8 ♂, 6 ♀; same data but 14.II.70, # 67, 29 ♂, 13 ♀; Kandy, 16.I.64, R. Mussard, 1 ♂; Kandy, ca 600m, Udawattekele Sanctuary, 22.I.70, ExpG # 18, 4 ♂, 2 ♀; Peradeniya, ca. 550m, 19.I.70, ExpG # 10, 4 ♂, 1 ♀ (MHNG, PCSK).

Description. Length 1.60-1.65 mm. With most diagnostic characters similar to those of *N. transjugata*, distinguished from latter by: Punctuation coarse and dense on lateral areas of head, between antennal tubercles and neck constriction, and throughout frontoclypeus. Median vertexal crest long, reaching semicircular sulcus. Eyes smaller. Antennal segment 3 slightly shorter, wider than long. Pronotum 0.36-0.37 mm long, 0.32-0.34 mm wide; admesal intervals wider than intervals between inner and outer lateral sulci, upper part of lateral humps bearing dense, short, erect setae not covering outer lateral sulci and not forming tomentose stripes. Metasternum with small, foveiform, medio-apical impression.

Male characters. Eyes multifaceted, largest eye diameter about twice as large as interval between eye margin and upper head margin, and almost twice as large as temporal length. Antennal segments 7 and 8 symmetrical. Antennal club as Figs 59. Humeral humps inconspicuous. Profemora with ventral side flattened, bearing minute denticle near anterior edge, slightly posterior basal third. Mesofemora with sharp tooth perpendicular to femoral axis, situated near upper edge of posterior side, near apical third of femoral length. Mesotibiae (Fig. 84) gradually widened toward distal third, obliquely truncate on mesal side, slender in distal fourth; oblique margin bearing spine. Aedeagus (Figs 79, 80) with tip of median lobe abruptly bent and hook-like; internal sac gradually narrowed apically, slightly curved.

Female characters. Eyes small, with 11 or 12 facets, largest eye diameter about as long as tempora and as interval between eye and upper head margin.

Comments. This species may be distinguished by the antennal segments 3 to 5 each distinctly wider than long and the vertex lacking a median fovea or sulcus in combination with the male mesotibiae strongly widened.

Nesiotomina transjugata sp. n.

Figs 57, 58, 77, 78

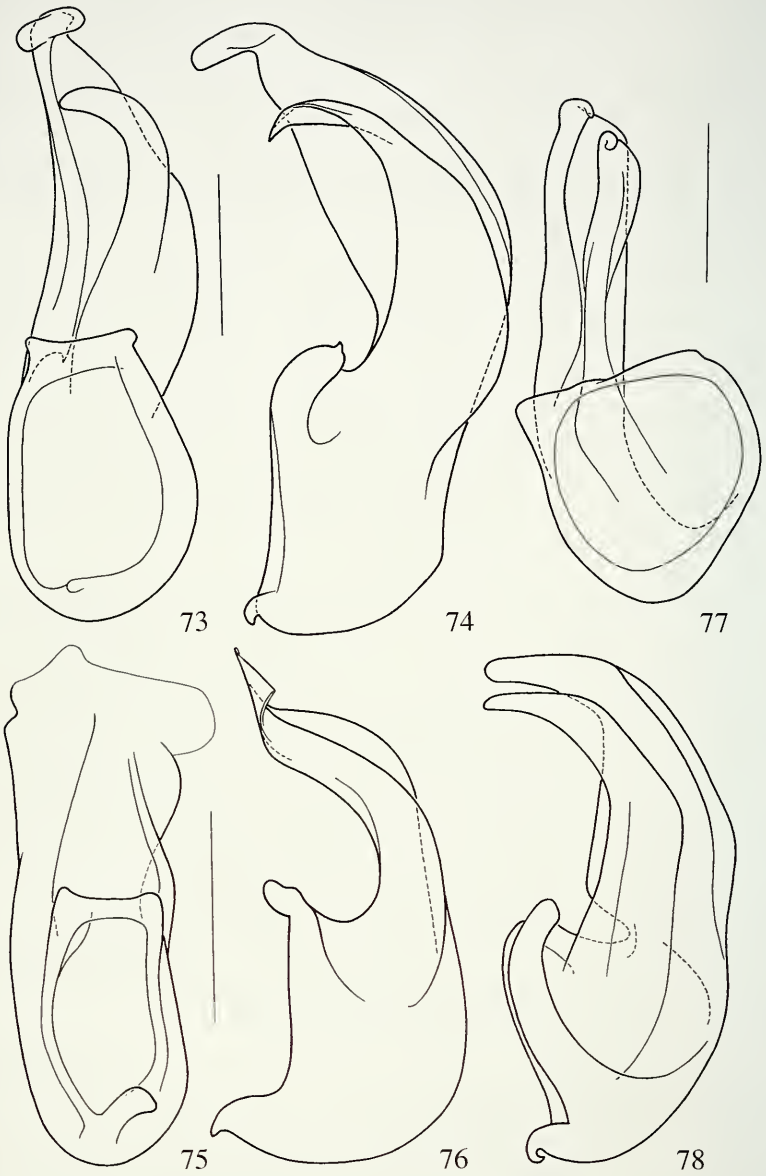
Batrisus spinicollis; Raffray, 1894a: 446.

Nesiotomina spinicollis; Jeannel, 1961: 431.

Holotype ♂: SRI LANKA: CENTRAL PROV.: Hakgala, 1700m, 18.I.70, ExpG # 30d, (MHNG).

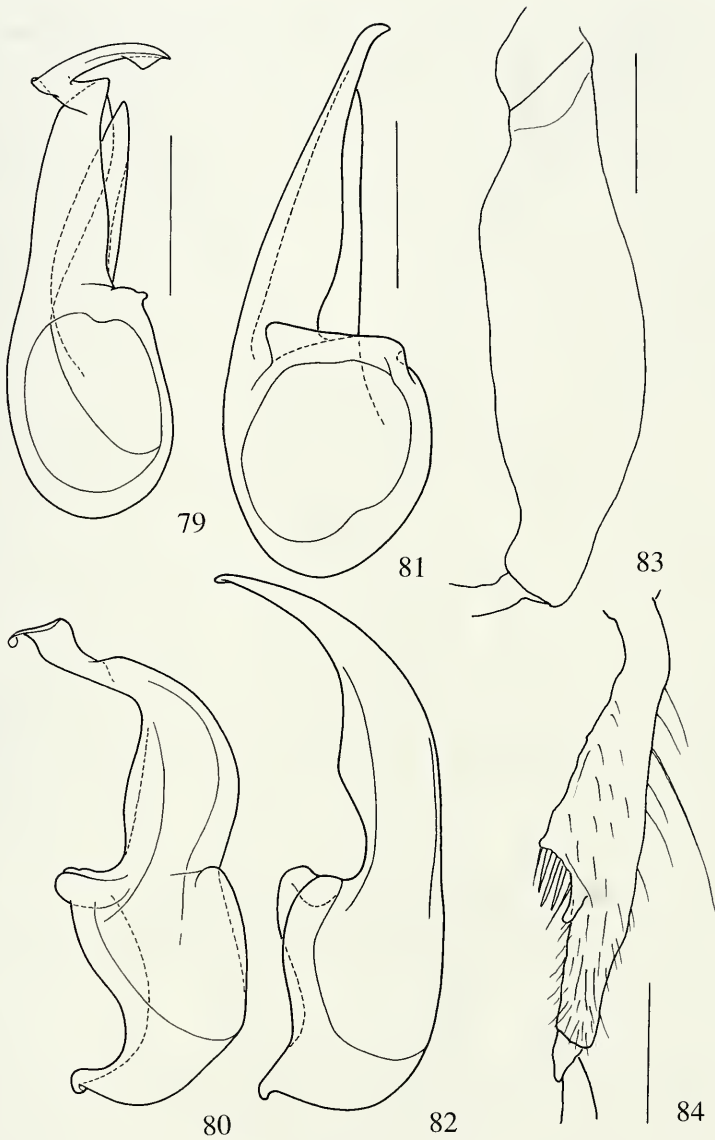
Paratypes: SRI LANKA: CENTRAL PROV.: Hakgala, 1700m, 18.I.70, ExpG # 30d, 1 ♂, 2 ♀ (MHNG, PCSK); Horton Plains, 2100m, 15.II.70, ExpG # 68, 1 ♂ (MHNG); "Nuwara Elia, Simon", 1 ♂ (MNHN); "Ceylan" 1 ♂ and 1 ♀, likely also taken by E. Simon at Nuwara Elia (MNHN).

Description. Length 1.8-2.0 mm. Head with lateral contours converging anteriorly. Punctuation throughout sparse and very fine, or few coarse punctures present



FIGS 73-78: *Nesiotomina* Jeannel, aedeagi

73 and 74: *N. longicollis* Jeannel, ventral (73) and lateral (74) views; 75 and 76: *N. perbrincki* sp. n., ventral (75) and lateral (76) views; 77 and 78: *N. transjugata* sp. n., ventral (77) and lateral (78) views. Scale bars = 0.1 mm.

FIGS 79 to 84: *Nesiotomina* Jeannel

79 and 80: *N. tibialis* sp. n., aedeagus in ventral (79) and lateral (80) views; 81 and 82: *N. spinicollis* (Motschulsky), aedeagus in ventral (81) and lateral (82) views; 83: *N. difficilis* sp. n., profemur; 84: *N. tibialis* sp. n., male mesotibia. Scale bars = 0.1 mm.

posterior antennal tubercles. Posterior part of vertex slightly convex. Median vertexal carina extended from occiput to level of or slightly anterior to level of anterior margins of tentorial foveae; median vertexal fovea or sulcus absent. Frontoclypeus moderately inclined. Tempora angulate. Antennal segments 3 and 5 equally large, elongate; segment 4 as long as large, shorter than segment 3, segment 6 as long as large. Pronotum 0.39-0.42 mm long, 0.37-0.40 mm wide. Inner lateral sulci as deep as mesal sulcus and arcuate. Admesal intervals flattened, widened toward centre; intervals between inner and outer lateral sulci flattened, evenly broad, narrower than centres of admesal intervals. Lateral humps narrow, convex, not impressed dorsobasally, with dense puncture rows along sulcus, lacking short, erect setae. Inner antebasal thorns long, vertical, barely curved. Metasternal impression small, about as long as large, becoming gradually deeper apically, with posterior wall almost vertical. Abdominal pubescence recumbent.

Male characters. Antennal segments 7 and 8 symmetrical, about equally wide; segment 7 as long as segment 5, segment 8 shorter; segment 9 moderately enlarged, impressed ventrally; segment 10 deeply impressed, with setiferous apophysis on outer margin; segment 11 with basal process orientated toward apophysis of segment 10, large glandular socle at base of inner margin, and small hook-like process posterior glandular socle (Figs 57, 58). Elytra with humeral areas oblique, humeral humps inconspicuous. Ventral side of profemora emarginate and smooth near base, apical end of emargination angulate. Mesotrochanters with posterior angle prominent to form robust process orientated backward. Mesofemora deeply emarginate on ventral side, near base; emargination limited apically by minute ridge. Tibiae lacking obvious sexual characters. Aedeagus (Figs 77, 78) with distal process of median lobe almost evenly wide in ventral view, ventral lobe notched basally and arcuate in lateral view. Internal sac slender, comparatively strongly sclerotized, sinuate in ventral view, arcuate in lateral view.

Female characters. Eyes fairly large, with about 15 facets; largest eye diameter longer than interval between upper eye and upper head margins.

Comments. This species may be distinguished by the elongate antennal segment 3 in combination with the admesal intervals of the pronotum strongly narrowed anteriorly.

Batrisomalus Raffray

Fig. 85

Batrisomalus Raffray, 1904: 60; type species *Batrisus microphthalmus* Raffray, 1894. *Cratnodes* Jeannel, 1961: 433; type species *Cratnodes lewisi* Jeannel, 1961. - **Syn. n.**

Description. Habitus as Fig. 85. Length 1.6-2.7 mm. Body with dorsal side flattened. Head slightly below plan of pronotum; pronotum, elytra and tergite 1 in almost same plan. Punctuation of body mostly dense and very fine. Pubescence variably long, particular long setae present in some species.

Head subquadrate, about as long as wide, with eyes narrower than pronotum. Lateral contours rounded. Frontal lobe about in same plan as lateral parts of vertex, impressed between antennal tubercles and inclined anteriorly. Antennal fossae distant, frontoclypeus wide, strongly inclined to vertical, hardly visible in dorsal view. Anten-

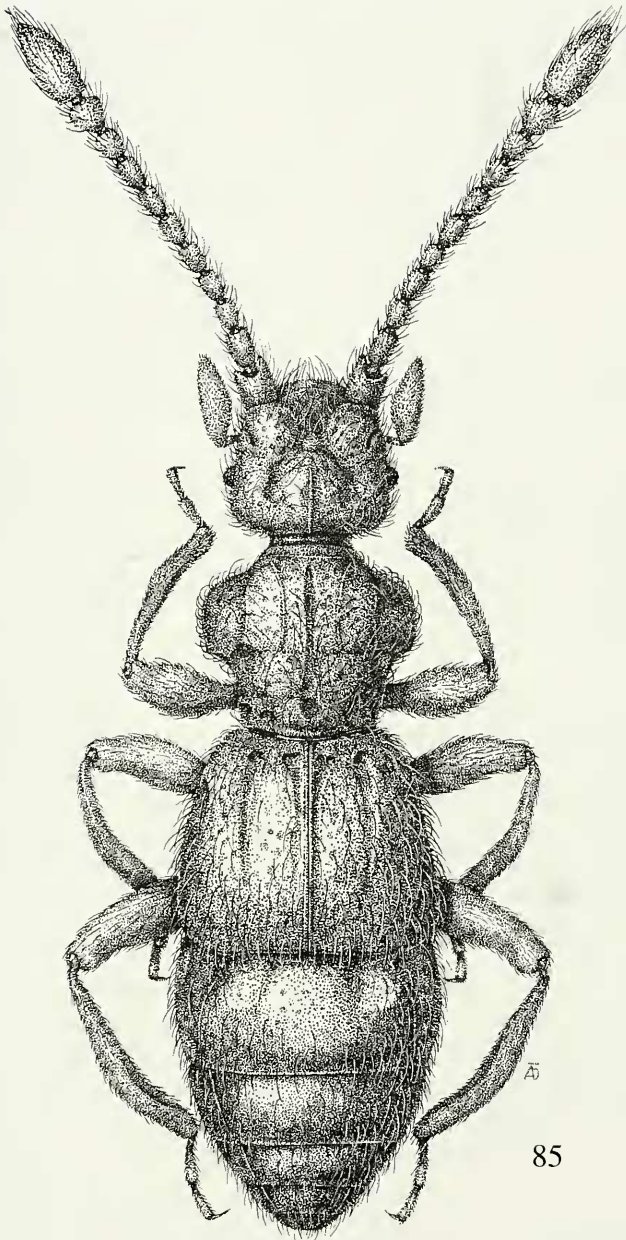


FIG. 85
Batrisomalus microphthalmus (Raffray).

nal tubercles very low. Vertexal foveae not in impressions. Vertexal sulci converging anteriorly, usually joined to vertexal foveae, not or weakly curved, extending on to anterior part of frontal lobe, and not joined. Vertex raised in middle to form a hump and bearing median carina. Lateral frontal foveae large, situated posterior antennal tubercles. Ocular-mandibular carina touching eye margin. Occipital margin of vertex truncate, convex, inclined toward neck. Eyes small, not notched, situated in middle part of head, usually with less than 15 facets. Tempora long. Ventral side of head fairly long, weakly convex, weakly inclined toward neck, lacking long postgenal setae. Gular foveae close, in common impression.

Maxillary palpi fairly short. Segment 2 thickened apically; segment 3 short, narrowed mesally; segment 4 with broad base, short stalk. Antennae moderately long. Scape cylindrical, with apicodorsal angles blunt, not prominent, lacking modified setae and glandular orifice. Segments 2 to 8 symmetrical and cylindrical. Pedicel elongate, smaller than scape. Segments 4, 6 and 8 smaller than adjoined segments. Club 3-segmented.

Pronotum flattened, wider than long, longer than head, cordiform, abruptly narrowed posterior lateral humps; lateral humps distinctly below plan of centre; with one mesal and two lateral sulci, two low discal carinae, antebasal ridge, four basal foveae, two lateral foveae and short basomesal carina. Lateral margins each usually with small marginal denticle. Discal tubercles or denticles absent. Paranotal ridges entire, sinuate in lateral view. Hypomera smooth, with basolateral foveiform impressions.

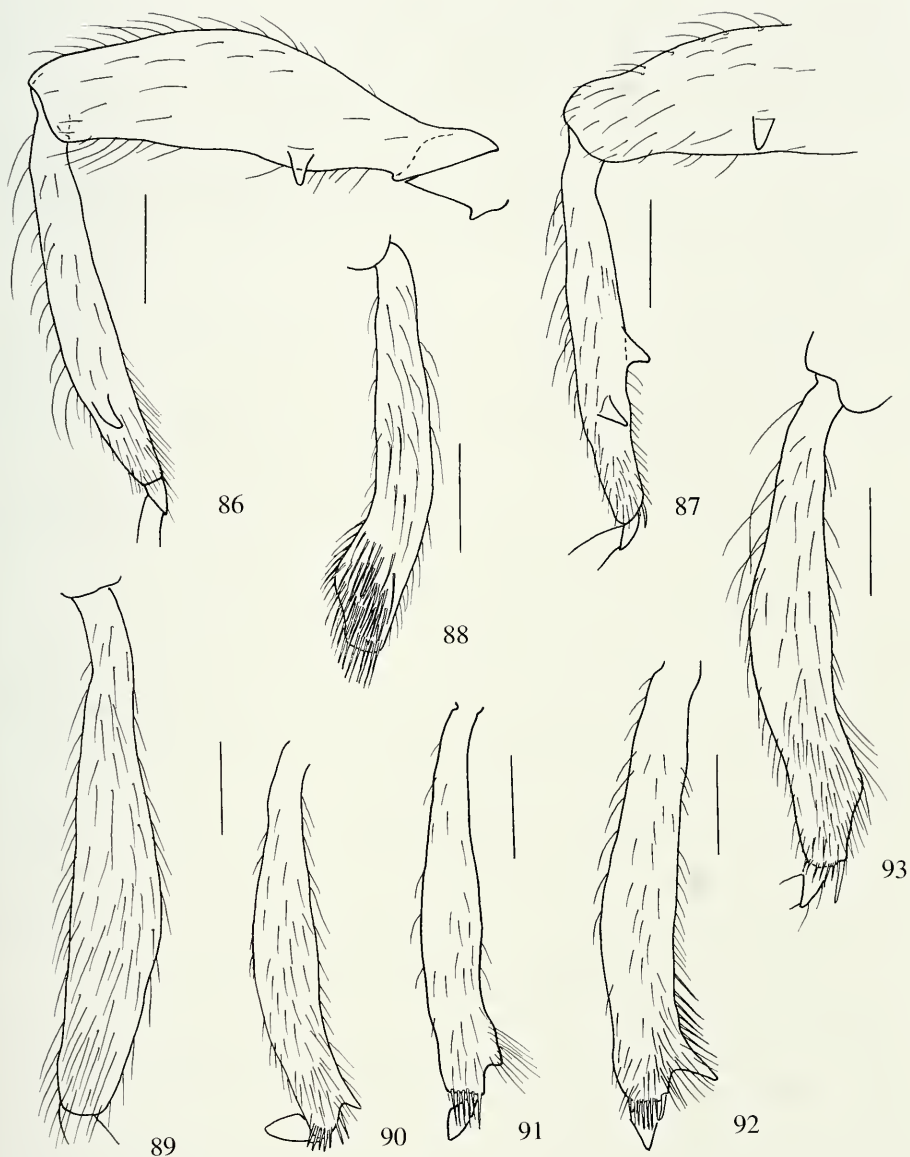
Elytra weakly convex to flat, comparatively short, usually combined much wider than long but in *B. pubis* as wide as long; each with two or three basal foveae, subhumeral fovea, sutural stria, short discal stria and lateral carina. Sutural striae rarely faints. Elytral punctation less fine than that of pronotum.

Metathoracic wings reduced. Metasternum with lateral metasternal foveae close, in common impression posterior intercoxal process; posterior intercoxal process prominent, with small median notch.

Legs moderately long. Tarsi fairly robust and short, tarsomeres 2 and 3 about equally long.

Abdomen convex, with 5 tergites visible in dorsal view. Tergite 1 usually longer than tergite 2, rarely about as long as tergite 2, gradually raised apically, not or slightly narrowed toward base, with lateral margins not raised, inner lateral carina extending up to apical margin, outer lateral carinae short, transverse basal ridge, one pair of laterobasal foveae situated in impressions. Tergites 2 and 3 margined laterally. Tergites 2 to 4 gradually narrowed and inclined, each with one pair of basolateral foveae. Sternite 1 with two pairs of deep, pubescent, basal impressions, ending at each side by one fovea; foveae in lateral impressions much larger than foveae in mesal impressions. Sternites 2 to 4 each with two pairs of small basal foveae.

Male sexual characters located on legs, eventually on abdominal sternites and antennae, in *B. hemipterus* also on frons. Eyes in males usually not distinctly larger than in females. Humeral tubercles similar in both sexes. Aedeagus moderately sclerotized, with basal bulb of median lobe expanded by ventral and dorsal processes lacking setiform sensilla. Ventral process flattened, conspicuously narrowed and cur-



FIGS 86 to 93: *Nesiotomina* Jeannel and *Batrisomalus* Raffray

86: *N. bellax* sp. n., male mesofemur and tibia; 87: *N. spinicollis* (Motschulsky), apical part of male mesofemur and tibia; 88: *B. hemipterus*, male mesotibia; 89 and 90: *B. micropluthalnnus* (Raffray), metatibia (89), protibia (90); 91: *B. lewisi* (Jeannel), male mesotibia; 92: *B. tuberculatus* sp. n., male mesotibia; 93: *B. foveolatus* sp. n., male mesotibia. Scale bars = 0.1 mm.

ved in apical portion. Dorsal process larger, usually arcuate. Internal sac membranous, sometimes partly sclerotized.

Habitat. Members of *Batrisomalus* were taken in indigenous forests, mostly at high elevation, from sieved moist debris, or found under stones.

Distribution. Hills and mountains in central Sri Lanka and South India.

Comments. The genus includes eleven species, four previously described from Sri Lanka and one, *B. infossus* Raffray, from South India. The original material of the Indian species was not available for study. However, the description (Raffray, 1904) is sufficient for its distinction from the congeners.

KEY TO THE SPECIES OF *BATRISOMALUS*

- | | | |
|---|--|---|
| 1 | Elytra with three basal foveae | 2 |
| - | Elytra with two basal foveae | 3 |
| 2 | Elytra much shorter than abdomen, finely and densely punctate
. <i>B. foveolatus</i> sp. n. | |
| - | Elytra about as long as abdomen, densely and coarsely punctate (South
India) <i>B. infossus</i> Raffray | |
| 3 | Abdominal tergite 1 slightly longer than tergite 2. Elytra with faint
sutural striae. Large species 2.7 mm long <i>B. pubis</i> sp. n. | |
| - | Abdominal tergite 1 distinctly longer than tergite 2. Elytra with sutural
striae distinct. Smaller species, length not exceeding 2.3 mm 4 | |
| 4 | Vertexal sulci faint. Antennal tubercles strongly raised, expanded, covered
by conspicuous, coarse, very dense punctation <i>B. tuberculatus</i> sp. n. | |
| - | Vertexal sulci distinct. Antennal tubercles not or weakly raised, not
expanded, impunctate or very finely punctate on top 5 | |
| 5 | Vertexal sulci subparallel near vertexal foveae 6 | |
| - | Vertexal sulci strongly converging anteriorly 7 | |
| 6 | Small species, 1.6 mm long <i>B. hemipterus</i> (Raffray) | |
| - | Larger species, 2.1 mm long. Male mesotibiae with long, acute, sub-
apical tooth on mesal side <i>B. currax</i> sp. n. | |
| 7 | Abdominal tergites and metatibiae with several, particularly long setae.
Antennal segment 10 distinctly longer than wide. Eyes multifaceted, in
dorsal view about as long as tempora 8 | |
| - | Abdominal tergites and metatibiae lacking particular, long setae.
Antennal segment 10 as long as wide or hardly longer than wide. Eyes
with 9-15 facets, much shorter than tempora 9 | |
| 8 | Antennal segment 11 almost 3 times as long as wide. Male tibiae
lacking denticles <i>B. cautus</i> sp. n. | |
| - | Antennal segment 11 about twice as long as wide. Male mesotibiae
with subapical denticle <i>B. lewisi</i> (Jeannel) | |
| 9 | Vertex slightly impressed medioposteriorly, with distinct lateral cari-
nae. Antennal segments 3, 4, 6 and 8 hardly or slightly longer than wide
. <i>B. depressus</i> (Raffray) | |
| - | Vertex not impressed medioposteriorly, usually without lateral carinae.
Antennal segments 3, 4, 6, and 8 distinctly elongate 10 | |

- 10 Male with protibiae bearing apical denticle, mesotibiae and metatibiae conspicuously curved, widened and lacking apical denticles
 *B. microphthalmus* (Raffray)
- Male with tibiae hardly curved, protibiae and metatibiae lacking apical denticle, mesotibiae bearing apical denticle *B. obtectus* sp. n.

***Batrisomalus cautus* sp. n.**

Figs 94, 95

Holotype ♂: SRI LANKA: CENTRAL PROV.: Hakgala, 5 mls SE Nuwara Eliya, 3.III.62, Expl 114:I, debris in jungle (ZMLU).

Description. Length 1.9 mm. Pubescence long, abdominal tergites with several particular, longer setae. Head with eyes much wider than long (ratio 44/32). Vertexal hump moderately high, obliquely raised toward occipital margin. Median carina not in impression. Occipital margin truncate in dorsal view. Lateral areas of vertex convex, lacking carina, gradually inclined toward occiput. Vertexal sulci inverted V-shaped, extending and strongly approximate on interantennal bridge, not clearly joined. Interantennal bridge deeply impressed between antennal tubercles, inclined, not clearly delimited from steep inferior part of frontoclypeus. Eyes large, with at least 35 facets, about as long as tempora in dorsal view. Antennal tubercles and lateral parts of vertex with irregular, fine and sparse punctures; vertexal hump very finely punctate, large area between vertexal sulci triangular, almost impunctate. Antennal segments 3, 4 and 6 equally large, each about 1.7 times as long as wide; segments 5 and 7 each slightly longer and hardly wider than segment 6; segment 8 as wide as but slightly shorter than segment 6, about 1.5 times as long as wide; segments 9 and 10 elongate, almost equally large, segment 11 nearly 3 times as long as wide, slightly shorter than segments 10, 9 and 8 combined. Pronotum slightly wider than head with eyes and moderately wider than long (ratio 45/40). Disc slightly above plan of vertex, distinctly below plan of elytra. Admesal areas flat, horizontal in middle, areas between admesal carinae and lateral sulci flat, very weakly inclined laterally. Lateral humps distinctly below plan of admesal areas, convex, each with small marginal denticle pointed dorsally. Median sulcus deep, hardly widened at basal end; basal end fairly distant from base and not touching basomedian carina. Discal punctation distinct, finer than that on vertexal hump. Elytra convex, fairly long and wide, about as long as abdomen, almost 1.2 times as wide as long, slightly more than 1.4 times as wide as pronotum. Lateral contours distinctly arcuate. Sutural and discal striae distinct, discal striae extending up to elytral mid-length. Humeral protuberances distinct, rounded. Punctuation fairly fine, distinctly coarser than that on pronotum. Abdomen with punctuation similar to that of elytra. Tergite 1 twice as long as tergite 2, widest at base, slightly narrowed apically, with lateral margins straight. Tergite 2 with lateral margins slightly arcuate, narrowed apically. Metatibiae with few particular, long setae.

Male characters. Abdominal sternites lacking obvious sexual characters. Tibiae slightly curved, lacking denticles. Protibiae gradually thickened toward middle, evenly thick between mid-length and apical fifth, slightly broader in apical fifth than in middle, dense, robust pubescence covering apical fourth of mesal side. Mesotibiae gradually thickened toward mid-length, flattened in apical half of mesal side, with

dense, robust pubescence covering apical third of mesal side. Metatibiae gradually thickened toward apical third, flattened and with long, robust setae covering apical half of mesal side and forming small setal tuft at apex. Aedeagus (Figs 94, 95) with ventral process of median lobe narrowed toward apical third, abruptly bent at tip and flat (lateral view). Dorsal process fairly wide, with almost straight left margin and sinuate right margin, apical margin emarginate. Internal sac with distinct rod.

Comments. This species may be distinguished from its congeners having two basal elytral foveae by the strongly converging vertexal sulci, the abdominal tergites lacking long setae and the antennal segment 11 almost 3 times as long as wide.

***Batrisomalus currax* sp. n.**

Figs 96, 97

Holotype ♂: SRI LANKA: CENTRAL PROV.: Pidurutalagala, 2200m, 29.I.70, forest on south-western slope, ExpG # 32 (MHNG).

Description. Length 2.1 mm. Body with long pubescence. Head, eyes included, much wider than long (ratio 45/35). Vertexal hump high and flat. Median carina not in impression. Occipital margin rounded, not prominent in middle. Lateral areas of vertex rounded, gradually inflecting from antennal tubercles, lacking carina. Vertexal sulci parallel near vertexal foveae, obliquely converging toward interantennal bridge, not joined and not extending on interantennal bridge. Interantennal bridge rounded and gradually inclined, not clearly delimited from steep inferior part of frontoclypeus. Eyes small, with 12 facets, about as long as two thirds of tempora in dorsal view. Tip of antennal tubercles impunctate; punctation dense and fairly coarse on interantennal bridge and posterior antennal tubercles, sparse and very fine on vertexal hump. Antennal segments 3, 4 and 6 equally large, each about 1.5 times as long as wide, segment 5 slightly longer and hardly wider than adjoining segments; segment 7 as long as and slightly wider than segment 5, about 1.5 times as long as wide, segment 8 as long as but slightly wider than segment 3, about 1.2 times as long as wide; segment 9 slightly longer than wide; segment 10 wider than long, asymmetrically expanded apicomeresally, with flat mesal side, widest at apical margin; segment 11 as long as segments 10 and 9 combined, about 1.5 times as long as wide. Pronotum hardly wider than head with eyes (ratio 47/45) and slightly wider than long (ratio 47/43). Disc slightly above plan of vertex and below plan of elytra. Admesal areas flat, horizontal in middle; areas between admesal carinae and lateral sulci slightly inclined laterally. Lateral humps distinctly below plan of admesal areas, convex, each with minute denticle at posterior margin. Mesal sulcus deep, widened at basal and anterior ends, basal end fairly distant from base, joined to basal margin by basomedian carina. Discal punctation very fine, similar to than on vertexal tubercle. Elytra moderately convex, long and narrow, widest near posterior angles, about as long as two thirds of abdomen, 1.2 times as wide as long and 1.2 times as wide as pronotum. Lateral contours conspicuously weakly arcuate. Sutural and discal striae distinct, discal striae extending to posterior third of elytra. Humeral protuberances absent. Punctation fairly coarse. Tibiae lacking conspicuous, long setae. Abdomen with punctation similar to that of elytra, lacking particular long setae. Tergite 1 about twice as long as tergite 2, hardly widened apically, with lateral margins straight.

Male characters. Abdominal sternite 1 flattened in middle. Protibiae becoming thicker from base to mid-length, evenly thick and slightly curved in apical half, with apical denticle minute, acute, pointed mesally. Mesotibiae almost straight, with large, oblique, subapical denticle pointed ventroapically; apical fifth of mesotibiae narrowed dorsoventrally, from denticle to apex. Metatibiae almost straight, becoming thicker from base to mid-length, about evenly wide in apical half, flattened in mesal side. Aedeagus (Figs 96, 97) with ventral process of median lobe gradually narrowed (ventral view) and hook-like at tip. Dorsal process fairly wide, narrowed apically, truncate at apex. Internal sac well sclerotized, thick basally, with apical portion long, flattened and in angle to basal portion.

Comments. The shape of the antennal segment 10 may be a male sexual character. It is diagnostic for this species.

***Batrisomalus depressus* (Raffray)**

Batrisus depressus Raffray, 1894a: 448.

Batrisomalus depressus; Raffray, 1904: 103; Raffray, 1908: 182; Jeannel, 1961: 433.

Type material. Holotype ♀: SRI LANKA: CENTRAL PROV. labelled: 660 /1409 /Hakgala [Nak-Gala in Raffray, 1904] Simon (hand-written) / TYPE (red) / *Batrisomalus Rffr depressus* Rffray ♀ Type Ceylan (hand-written) / *Batrisomalus depressus* Raffr. det. Löbl 1978 (MNHN).

Additional material. SRI LANKA: CENTRAL PROV.: Hakgala 5 mls SE Nuwara Eliya, 5.III.62, ExpL # 114:I, jungle sieved in debris, 2 ♀ (MZLU, MHNG); Hakgala, 1700m, ravine on north-eastern slope, 28.I.70, ExpG # 30a, 1 ♀ (MHNG).

Description. Length 1.6 mm. Body finely punctate, with long pubescence. Head, eyes included, much wider than long (ratio 41/30). Vertexal hump low, flattened in middle, raised lateroposteriorly to form two tubercles at occipital margin. Median carina impressed. Occipital margin arcuate. Lateral areas of vertex flat, horizontal, almost in same plan as antennal tubercles, each with long carina extending from postantennal fovea to occipital margin. Vertexal sulci converging to interantennal bridge but not joined, their anterior arms parallel on interantennal bridge. Interantennal bridge rounded anteriorly, not clearly delimited from very steep inferior part of frontoclypeus. Eyes small, with 9 or 10 facets, about half as long as tempora in dorsal view. Tip of antennal tubercles impunctate; punctation on interantennal bridge and posterior antennal tubercles coarser than that on vertexal tubercle. Antennal segment 3, 4 and 6 equally large, each about 1.1 times as long as wide; segments 5 and 7 slightly longer and wider than segment 6; segment 8 hardly smaller than segment 6; segments 9 and 10 equally long, slightly longer than segment 7, segment 9 as long as wide, 10 wider than long; segment 11 almost twice as long as wide, slightly longer than segments 9 and 10 combined. Pronotum distinctly wider than head with eyes (ratio 46/40) and wider than long (ratio 45-46/39-40). Disc slightly raised above plan of head, almost in plan with elytra. Admesal area flat, horizontal; areas between admesal carinae and lateral sulci hardly below plan of admesal area, flat and horizontal; lateral humps distinctly below plan of admesal area, rounded. Median sulcus deep, fairly wide, starting fairly distant from basal margin; basomedian carina very short, inconspicuous, separated from median sulcus by flat interval. Margin of lateral humps each with acute denticle pointed dorsally. Discal punctation coarser

than that on vertexal centre. Elytra convex, wide and short, about 1.3 times as wide as long, hardly 1.2 times as long as pronotum; shorter than abdomen (as long as combined length of abdominal tergites 1 to 3), with lateral margins arcuate. Sutural and discal striae distinct, discal striae extending slightly posterior elytral mid-length. Humeral tubercles very small. Punctuation less fine than that on pronotum. Tibiae without particular, long setae. Abdomen with punctuation similar to that on elytra, lacking particular long setae. Tergite 1 about 2.5 times as long as tergite 2, distinctly, gradually narrowed toward base, with lateral margins oblique. Tergite 2 slightly narrowed apically, with lateral margins arcuate.

Comments. This species may be distinguished from other congeners having elytra with two basal foveae by the abdominal tergites bearing uniform short pubescence, the very small eyes, and the vertex distinctly carinate laterally.

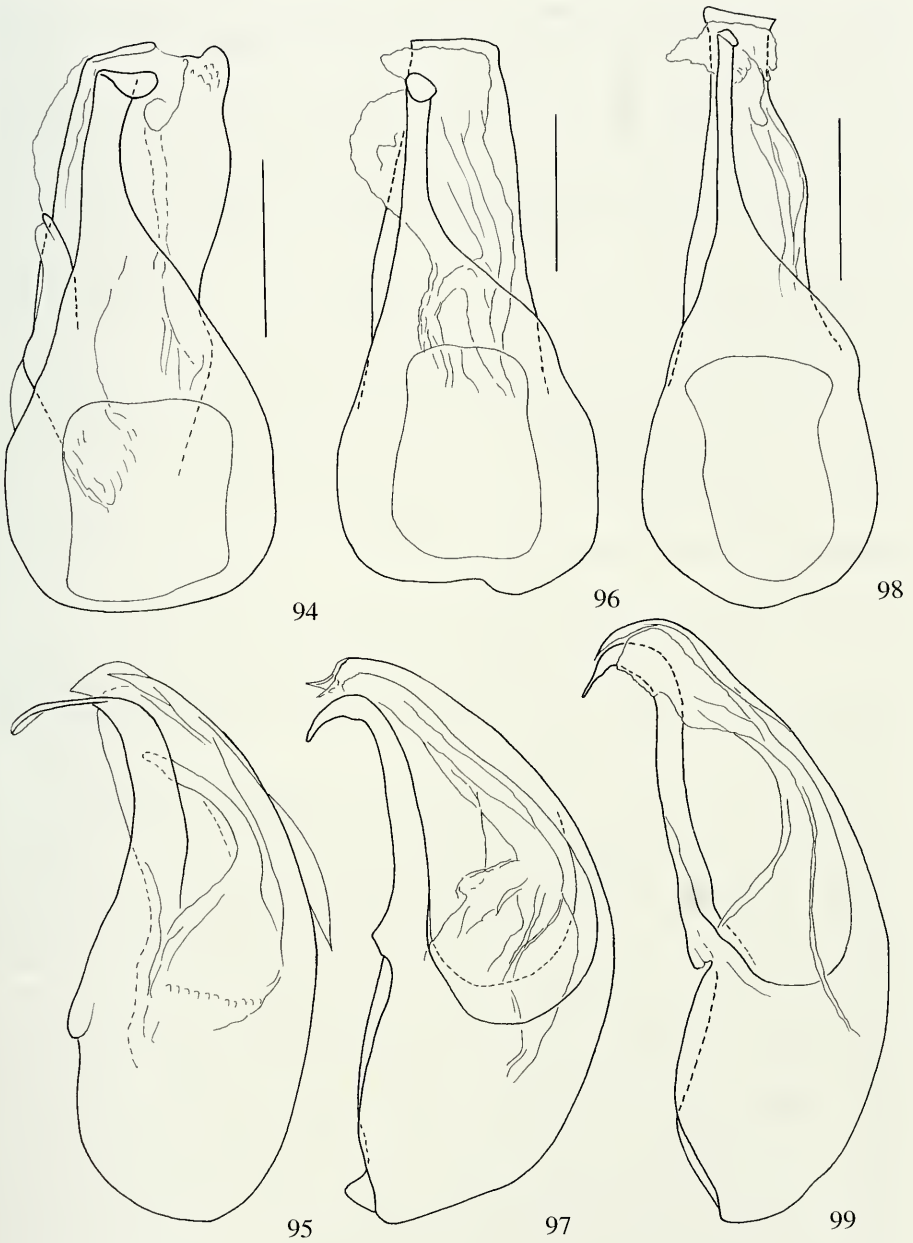
***Batrisomalus foveolatus* sp. n.**

Figs 93, 98, 99

Holotype ♂: SRI LANKA: CENTRAL PROV.: Ramboda 7 mls NW Nuwara Eliya, 4.III.62, ravine with stream, under stones, ExpL # 118 (ZMLU).

Paratypes: SRI LANKA: CENTRAL PROV.: same data as holotype, 4 ♂, 4 ♀ (MZLU, MHNG); Foothills of Knuckle Mnts. 10 mls ENE Kandy, 11.III.62, jungle, ExpL #129, 1 ♂, 1 ♀ (MZLU).

Description. Length 2.0-2.15 mm. Body very finely punctate, with long pubescence. Head, eyes included, moderately wider than long (ratio 36/30). Vertexal hump moderately high, slightly raised posteriorly, flat, expanded above neck to form acute denticle (lateral view) at middle of occipital margin. Lateroposterior parts of vertex each rounded, gradually inclined posteriorly, with long carina joining frontal fovea. Vertexal sulci inverted V-shaped, joined on interantennal bridge. Interantennal bridge obliquely inclined, sharply delimited from steep inferior part of frontoclypeus by transverse carina. Frontoclypeus with median carina joining transverse carina to inferior margin of clypeus. Eyes fairly large, in both sexes with about 30 to 35 facets, and about as long as two thirds of tempora in dorsal view. Punctuation on tip and anterior surfaces of antennal tubercles finer than on vertex. Antennal segments 3, 4 and 8 equally large, each as wide as long or slightly wider than long; segments 4, 5 and 6 equally wide, each as wide as but longer than segment 3 and slightly longer than wide; segment 9 slightly longer than wide; segment 10 as long as segment 9, as long as wide, segment 11 twice as long as wide, as long as segments 10, 9 and half of 8 combined. Pronotum slightly wider than long and slightly wider than head with eyes. Disc below plan of elytra, raised above plan of head. Median sulcus deep and wide, touching basomedian carina. Admesal areas convex, not inclined laterally. Areas between discal carinae and lateral sulci slightly inclined laterally. Margins of lateral humps rounded, without denticle; with one pair of small, lateral denticles, situated between outer antebasal and lateral foveae. Discal punctuation very fine, similar to than of vertex. Elytra convex, short and wide, about 1.2 times as long as pronotum, combined much wider than long (ratio about 7/5), with lateral margins arcuate. Each elytron with 3 basal foveae, distinct sutural striae; discal striae almost faint, variably long; humeral humps distinct, angulate posteriorly. Punctuation slightly coarser than on head. Abdomen with punctuation slightly coarser than that of elytra;



FIGS 94 to 99: *Batrisomalus* Raffray, aedeagi

94 and 95: *B. cautus* sp. n., ventral (94) and lateral (95) views; 96 and 97: *B. currax* sp. n., ventral (96) and lateral (97) views; *B. foveolatus* sp. n., ventral (98) and lateral (99) views. Scale bars = 0.1 mm.

with several, particularly long setae. Tergite 1 with lateral margins slightly arcuate, at base about as wide as at apex, slightly more than twice as long as tergite 2. Tergite 2 narrowed apically.

Male characters. Elytra with humeral humps larger. Tibiae lacking denticles. Protibiae arcuate, thickened from base to mid-length, evenly robust in apical half. Mesotibiae robust, thickened from base to mid-length, in apical half slightly sinuate, forming blunt subapical angle (Fig. 93). Metatrochanters expanded, with impression bearing tuft of short setae on posterior side. Metatibiae slightly arcuate. Abdominal sternites without obvious sexual characters. Aedeagus (Figs 98, 99) with ventral process of median lobe strongly narrowed in apical two thirds, tip curved, forming short, acute hook. Dorsal process arcuate in lateral view, narrowed apically in ventral view, with truncate apex. Internal sac with sclerotized, arcuate rod.

Comments. This species may be readily distinguished from the other Sri Lankan members of *Batrisomalus* by the elytra each having three basal foveae. It shares this characters with *B. infossus* Raffray from South India, that differs by the parabolic vertexal sulci and the coarse and sparse elytral punctation.

***Batrisomalus hemipterus* (Raffray)**

Figs 88, 100, 101

Batrisus hemipterus Raffray, 1894a: 449.

Batrisomalus hemipterus; Raffray, 1904: 60 and 103; Raffray, 1908: 182; Jeannel, 1961: 433.

Type material: SRI LANKA: CENTRAL PROV.: 1 ♂ labelled: Simon Nuwara Elia (hand-written) /1410 / 662 / *Batrisomalus Rffr hemipterus Rffray* Type Ceylan (hand-written) / TYPE (red) / *Batrisomalus hemipterus* Raffr. Det. Löbl 1978 (MNHN); 2 ♀ from the same original slide, subsequently labelled: Ceylon Nuwara Eliya Simon / TYPE (red) / *Batrisomalus hemipterus* Raffr. Det. Löbl. 1978 (MNHN).

Description. Length 1.65 mm. Body finely punctate, with long pubescence. Head, eyes included, much wider than long (ratio 39/29). Vertexal hump high, not raised posteriorly, flat or weakly convex, not expanded above neck. Lateroposterior parts of vertex oblique and flattened, lacking carina. Vertexal sulci inverted U-shaped, parallel posteriorly. Mesal vertexal carina long, extending from neck up to anterior, inclined surface of vertexal hump. Interantennal bridge strongly modified in male, rim-like in female, lacking transverse carina. Frontoclypeus without median carina. Eyes small, in both sexes with 7 or 8 facets, slightly shorter than half of temporal length in dorsal view. Antennal tubercles smooth, impunctate, frons and vertex very finely punctate. Antennal segments 3 to 8 equally wide, segments 3, 5 and 7 each almost twice as long as wide, segments 4 and 6 shorter, about 1.5 times as long as wide, segments 8 and 9 each slightly longer than wide, segment 10 as long as wide, segment 11 about twice as long as wide, as long as segments 8 to 10 combined. Pronotum distinctly wider than long and wider than head with eyes. Disc and elytra at same plan, raised above plan of head. Median sulcus deep, narrow, touching baso-median carina. Admesal areas flat, not inclined laterally. Areas between discal carinae and lateral sulci slightly inclined laterally. Margins of lateral humps rounded, without denticle. Denticle between outer antebasal and lateral foveae absent. Discal punctation very fine, similar to than of vertex. Elytra convex, short and wide, about 1.2 times as long as pronotum, combined much wider than long (ratio about 5/4), with

lateral margins arcuate. Each elytron with 2 basal foveae, distinct sutural striae; discal striae extending to apical third of elytral length; humeral humps distinct, angulate posteriorly. Punctuation irregular, much coarser than on pronotum and head. Abdomen with punctuation finer than that of elytra; with several, particularly long setae. Tergite 1 with lateral margins straight, at base slightly narrower than at apex, about twice as long as tergite 2. Tergite 2 narrowed apically.

Male characters. Frons with two conspicuous, flat and impunctate, almost semicircular plates at each side of anterior portion of vertexal hump. Frontal plates sharply delimited anteriorly by arcuate margins, posteriorly by deep, transverse sulci. Mesal, inclined part of frontoclypeus swollen, with conspicuously dense pubescence. Anterior, inclined surface of vertexal hump with conspicuously dense pubescence. Elytra with humeral humps hardly larger. Protibiae straight, with slightly arcuate outer side, bearing spine-like, subapical denticle at mesal side. Mesotibiae lacking denticle, straight and gradually thickened from base to apical third, in apical third curved and swollen mesally (Fig. 88). Metalegs and abdominal sternites without obvious sexual characters. Aedeagus (Figs 100, 101) with ventral process of median lobe strongly narrowed in apical two thirds, tip curved, forming short, acute hook. Dorsal process arcuate in lateral view, narrowed apically in ventral view, with truncate apex. Internal sac with sclerotized, arcuate rod.

Comments. This species may be readily distinguished from its congener by the shape of the vertexal sulci and by the conspicuously modified male frons.

Batrisomalus lewisi (Jeannel) comb. n.

Figs 91, 102, 103

Cratnodes lewisi Jeannel, 1961: 433.

Type material. Holotype ♀: SRI LANKA: CENTRAL PROV.: labelled: Kandy, 1,546-1,727 ft., 6.IV.1882 /Ceylon G. Lewis, 1910-320 (NHML); paratype ♂: CENTRAL PROV.: Bogawantalawa, 4900-5200 ft, 21. III.-4.IV.1882, G. Lewis /*Cratnodes Lewisi* n sp (hand-written by Jeannel) / *Batrisomalus lewisi* (Jeannel) Löbl & Kurbatov det. (MNHN).

Additional material. SRI LANKA: SABARAGAMUWA PROV.: Maratenna at 4500ft, 7 mls N Balangoda, 22.II.62, ExpL # 98, sieved in debris, 4 ♂, 3 ♀, (MZLU, MHNG); SRI LANKA: Ceylon, Coll. Cl. Müller, 2 (ZSMC).

Description. Length 1.9-2.0 mm. Body with long pubescence, abdominal tergites bearing several particularly long setae. Head, eyes included, much wider than long (ratio 43/33 to 45/30). Vertexal hump flattened, moderately raised toward occipital margin, at highest point slightly above plan of antennal tubercles. Median carina raised. Occipital margin arcuate. Dorsolateral parts of head rounded, gradually inclined from antennal tubercles toward occipital margin, with inconspicuous, longitudinal carina. Vertexal sulci obliquely converging toward interantennal bridge, with anterior arms parallel, not joined. Interantennal bridge gradually inclined anteriorly, not clearly separated from more inclined inferior part of frontoclypeus. Eyes fairly large, in male with about 35 facets and in dorsal view as long as tempora, in female with 16 or 17 facets and about as long as two thirds of tempora in dorsal view. Tip of antennal tubercles impunctate, most of head distinctly punctate, centre of vertex with punctuation finer than that on lateral and anterior areas. Antennal segments 3 to 8

equally wide, segments 3 and 8 equally long, each about 1.2 times as long as wide; segments 4 and 6 slightly longer than segment 3; segments 5 and 7 equally large, about 1.7 times as long as wide, segment 9 distinctly longer than wide; segment 10 slightly longer than wide; segment 11 about twice as long as wide and as long as combined length of segments 10, 9 and half of 8. Pronotum and elytra similar to those in *B. depressus*; basomedian carina of pronotum extending to median sulcus or shortened; elytra 1.2-1.3 times as wide as long, as long as or longer than abdomen, with discal striae reaching mid-length or ending anterior to mid-length of disc. Metatibiae with several particularly long setae. Abdomen with punctation more dense than that of elytra. Tergite 1 parallel-sided, 2.3 to 3 times as long as tergite 2. Tergite 2 narrowed apically.

Male characters. Eyes larger, elytra longer than in female. Protibiae slightly curved, thickened from base to mid-length, in apical half evenly thick. Mesotibiae (Fig. 91) slightly curved, gradually thickened toward acute, subapical denticle on mesal side. Metatibiae lacking obvious sexual characters. Sternites 1 to 5 flattened in middle. Aedeagus (Fig. 102, 103) with ventral process of median lobe strongly narrowed in apical half, tip widened in ventral view, forming robust hook in lateral view. Dorsal process slightly arcuate in lateral view, almost evenly wide in ventral view.

Comments. This species may be distinguished from its congener of similar size and having two foveae at base of elytra by the strongly converging vertexal sulci, the abdominal tergites bearing several particularly long setae and the antennal segment 11 about twice as long as wide. Curiously, the holotype of *B. lewisi*, erroneously recorded as a male by Jeannel (1961), is the sole member of the genus found at Kandy, in spite of large collections made there by the Lund and Geneva expeditions.

***Batrisomalus microphthalmus* (Raffray)**

Figs 85, 89, 90, 104, 105

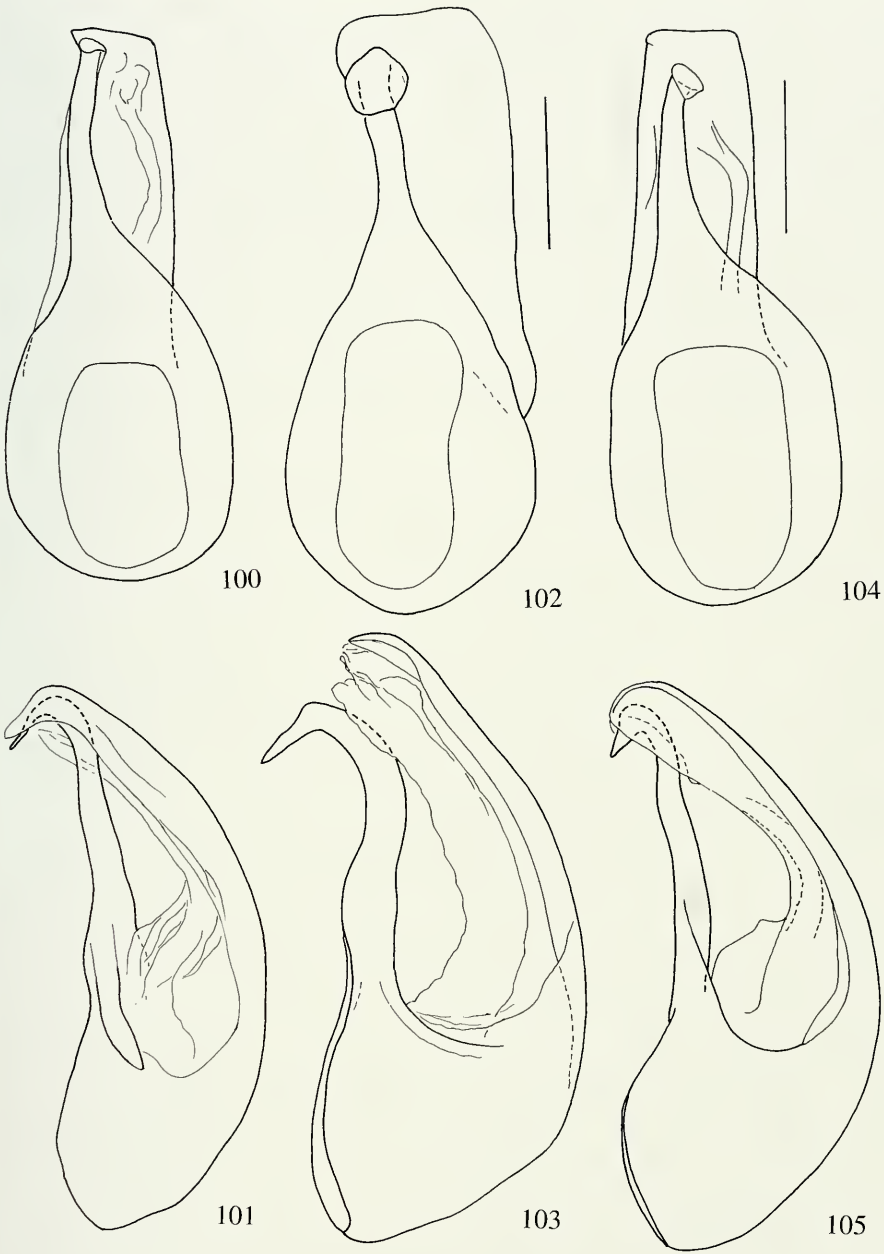
Batrisus microphthalmus Raffray, 1894a: 448.

Batrisomalus microphthalmus; Raffray, 1904: 103; Raffray, 1908: 182; Jeannel, 1961: 433.

Type material. SRI LANKA: CENTRAL PROV.: 2 ♀ syntypes on same pin, labelled: 661 /1408 /Nuwara Eliya Maturata (hand-written) /TYPE (red) /*Batrisomalus* Rffr *microphthalmus* Type Rffray Ceylan (hand-written) /*Batrisomalus microphthalmus* Raffr. det. Löbl 1978 (MNHN).

Additional material. SRI LANKA: CENTRAL PROV.: Pidurutalagala, 2500m, forest below summit, 29.I.70. ExpG # 31, 17 ♂, 26 ♀ (MHNG, PCSK); same but at 2200m, forest on south-western slope, 6 ♂, 6 ♀ (MHNG); Horton Plains, 2100m, forest, 15.II.70, ExpG # 68, 7 ♂, 9 ♀ (MHNG); Hakgala, 1700m, ravine, north-eastern slope, 28.I.70, ExpG # 30a, 15 ♂, 15 ♀ (MHNG, PCSK); Horton Plains, 6700ft, 11 mls SSE Nuwara Eliya, indigenous forest, 19-20.III.62, ExpL # 162, 2 ♂, 2 ♀ (MZLU, MHNG); Hakgala, forest, 5 mls SE Nuwara Eliya, 3.III.62, ExpL # 114:1, 1 ♂, 1 ♀ (MZLU); same data but ExpL # 114:II, 1 ♀ (MZLU).

Description. Length 2.0-2.25 mm. Body with long pubescence, lacking particular long setae. Head, eyes included, much wider than long (ratio 43-47/34-35). Vertexal hump hardly flattened, raising above plan of antennal tubercles, not raised apically. Median carina hardly raised. Occipital margin truncate. Dorsolateral parts of head rounded, not or hardly inclined posteriorly, lacking carina. Vertexal sulci inverted V-shaped, joined anteriorly. Interantennal bridge gradually inclined anteriorly, delimited from inferior, vertical part of frontoclypeus by oblique carinae or angles.



FIGS 100 to 105: *Batrisomalus* Raffray, aedeagi

100 and 101: *B. hemipterus* (Raffray), ventral (100) and lateral views (101); 101 and 103: *B. lewisi* (Jeannel), ventral (102) and lateral (103) views; 104 and 105: *B. microphthalmus* (Raffray), ventral (104) and lateral (105) views. Scale bars = 0.1 mm.

Eyes small, in female with 9 to 11 facets and in dorsal view about as long as half of tempora, in male with 14 or 15 facets and slightly longer than half of tempora, not exceeding length of two thirds of tempora. Tip of antennal tubercles usually impunctate, punctuation on and around antennal tubercles and on dorsolateral surface of head dense and fairly coarse, finer and less dense on middle portion. Antennal segments 3 to 8 equally wide, segments 3 and 8 almost even, each about 1.3 times as long as wide; segments 4 to 7 each distinctly longer than segment 8, about 1.4 to 1.6 times as long as wide; segment 9 distinctly longer than wide; segment 10 hardly longer than wide; segment 11 as long as segments 9 and 10 combined and twice as long as wide. Pronotum wider than head, eyes included, and wider than long (ratio 51-54/43-45). Disc slightly above plan of head, about in same plan as elytra. Admesal area flat, horizontal, areas between admesal carinae and lateral sulci slightly below plan of admesal area and slightly obliquely inclined; lateral humps distinctly below plan of admesal area, convex. Median sulcus deep and fairly wide, starting fairly close to base; basomedian carina extending to median sulcus, sometimes becoming very low anteriorly. Margins of lateral humps with small, acute denticle pointed dorsally. Discal punctuation fine, similar to that on vertexal centre. Elytra moderately convex, wide and short, about 1.2 times as wide as long, hardly 1.3 times as long as pronotum; much shorter than abdomen, about as length of tergites 1 and 2 combined, with lateral margins arcuate and two large basal foveae. Sutural and discal striae distinct, discal striae ending anterior to elytral mid-length. Humeral tubercles distinct. Punctuation coarser than that on pronotum. Tibiae lacking particular long setae. Abdomen with punctuation similar to that of elytra, lacking particular long setae. Tergite 1 about 1.5-1.8 times as long as tergite 2, shorter than tergites 2 and 3 combined, gradually narrowed toward base, with lateral margins oblique. Tergite 2 slightly narrowed apically, with lateral margins oblique.

Male characters. Eyes slightly larger than in female. Metasternum and sternites without particular characters. Profemora swollen. Protibiae (Fig. 90) distinctly curved, gradually thickened from base to mid-length, evenly wide in apical half, with acute, apical denticle on mesal side. Mesotibiae straight and gradually thickened toward fourth fifth, curved in apical two fifth, with mesal side slightly convex, outer side concave. Metatrochanters flattened and bearing straight, short setae on posterior side. Metatibiae (Figs 89) straight near base, conspicuously curved between basal fourth and apex, widened from base to middle, from middle to apex slightly narrowed, with mesal side concave and flattened, outer side convex. Aedeagus (Figs 104, 105) with ventral process of median lobe strongly narrowed in proximal part and slightly widened near tip in ventral view, sinuate and hook-like at apex in lateral view. Dorsal process of median lobe flat, almost parallel-sided, truncate apically. Internal sac moderately sclerotized.

Comments. This species may be easily distinguished from its congener of similar size and having elytra with two basal foveae by the male mesotibiae and metatibiae which are widened and conspicuously curved, and lack denticles.

***Batrisomalus obtectus* sp. n.**

Figs 106, 107

Holotype ♂: SRI LANKA: CENTRAL PROV.: Hakgala, 1700m, 28.I.70, ExpG # 30a (MHNG).

Description. Length 2.25 mm. With most characters as *B. microphthalmus* but conspicuously different by male sexual characters. Head (width/length ratio 50/35) with eyes hardly wider than in *B. microphthalmus*, vertexal hump more raised and flattened, median vertexal carina more prominent, lateral portion of vertex distinctly inclined and with longitudinal crest. Eyes with 12 or 13 facets. Antennal segments 3, 4 and 8 even, each about 1.3 times as long as wide, segments 5, 6 and 7 even, each slightly longer than segment 4 and about 1.4 times as long as wide; segment 9 hardly longer than wide, segment 10 as wide as long; segment 11 not quite twice as long as wide, slightly longer than segments 9 and 10 combined. Pronotum distinctly wider than head with eyes, and much wider than long (ratio 55/45). Tergite 1 about 1.6 times as long as tergite 2.

Male characters. Abdominal ventrites without obvious sexual characters. Profemora not swollen. Protibiae thickened in apical two thirds, with outer side slightly convex, mesal side very weakly concave; dense, robust pubescence covering apical half of mesal side. Mesotibiae gradually thickened from base to mid-length, outer side posterior middle flattened, mesal side slightly concave, with dense, robust pubescence extending from apex almost to mid-length, and with slightly curved, apical denticle. Metatibiae straight and gradually thickened from base to apical third, flattened and slightly curved in apical third, with robust, very dense pubescence completely covering apical fourth of mesal side and forming narrow, apicoventral setal bunch extending posterior tarsomere 1. Aedeagus (Figs 106, 107) with ventral process of median lobe strongly narrowed posterior middle, thickened to form acute subapical tooth (lateral view) and strongly curved at end. Dorsal process of median lobe wide, with right margin strongly sclerotized, left margin weakly sclerotized, truncate at apex. Internal sac strongly sclerotized basally, sinuate and gradually narrowed in lateral view.

Comments. This species is very similar to *B. microphthalmus* from which it differs notably by the mesotibiae hardly curved and bearing each an apical denticle.

***Batrisomalus pubis* sp. n.**

Figs 108, 109, 110

Holotype ♂: SRI LANKA: CENTRAL PROV.: Pidurutalagala, 2200m, forest on south-western slope, 29.I.70, ExpG # 32 (MHNG).

Paratype: SRI LANKA: CENTRAL PROV.: Horton Plains, forest at 2100m, 15.II.70, ExpG # 68, 1 ♂ (MHNG).

Description. Length 2.7 mm. Body finely punctate, with long pubescence. Head, eyes included, much wider than long (ratio 44/32). Vertexal hump moderately raised, rounded laterally. Occipital margin arcuate. Dorsolateral areas of head inclined from antennal tubercles toward occipital margin, each with short carina joined to postantennal fovea. Vertexal sulci inverted Y-shaped, with anterior arm narrow and separating obliquely inclined interantennal bridge. Interantennal bridge angulate anteriorly, well delimited from very steep inferior part of frontoclypeus. Eyes small,

with about 16 facets, in dorsal view about as half of temporal length. Punctuation on antennal tubercles coarser than on centre of vertex. Antennal segments 3 and 4 equally large, each about 1.3 times as long as wide; segment 5 distinctly longer and slightly wider than segment 4, about 1.6 times as long as wide; segments 6 and 7 even, each as long as and hardly wider than segment 4; segment 8 shorter than and as wide as segment 7, slightly longer than wide; segments 9 and 10 each as long as segment 7, segment 9 slightly longer than wide, segment 10 as long as wide; segment 11 twice as long as wide, slightly longer than segments 9 and 10 combined. Pronotum slightly wider than head with eyes (ratio 46/44) and slightly wider than long. Disc raised above plan of elytra and head. Admesal areas of disc almost horizontal, slightly inclined anteriorly. Disc distinctly inclined from admesal carinae toward lateral margins. Median sulcus wide and deep, starting close base, separated from basal margin by small tubercle. Margin of lateral humps angulate posteriorly, with denticles very low, inconspicuous. Discal punctuation very fine, similar to that on middle portion of vertex. Elytra comparatively elongate and narrow, about as long as combined wide, 1.5 times as long as pronotum, shorter than abdomen (as long as combined length of tergites 1, 2 and half of 3), each with 2 basal foveae. Sutural striae faint. Discal striae indicated by shallow impressions, extending almost to mid-length of disc. Humeral tubercles very small, angulate. Punctuation less fine than that on pronotum. Metatibiae with numerous, particularly long setae. Abdomen with punctuation similar to that on elytra, lacking particular long setae. Tergite 1 gradually, slightly narrowed toward base, slightly longer than tergite 2; tergite 2 about as wide at base as at apex, with lateral margins slightly arcuate.

Male characters. Profemora strongly swollen, meso and metafemora moderately swollen. Protochanters abruptly flattened on mesal side. Protibiae slightly arcuate, gradually thickened apically, with minute apical carina on mesal side. Mesotibiae curved posterior mid-length, gradually thickened apically. Abdominal sternites 1 to 4 impressed mesally. Sternite 5 concave, expanded apicolaterally and bilobed (Fig. 110). Aedeagus (Figs 108, 109) with ventral process of median lobe abruptly narrowed in apical half (ventral view), deep subapical notch and blunt apex. Dorsal process very wide, moderately expanding posterior ventral lobe, subparallel in ventral view, apical margin arcuate at right side, oblique at left side. Internal sac with sclerotized rods.

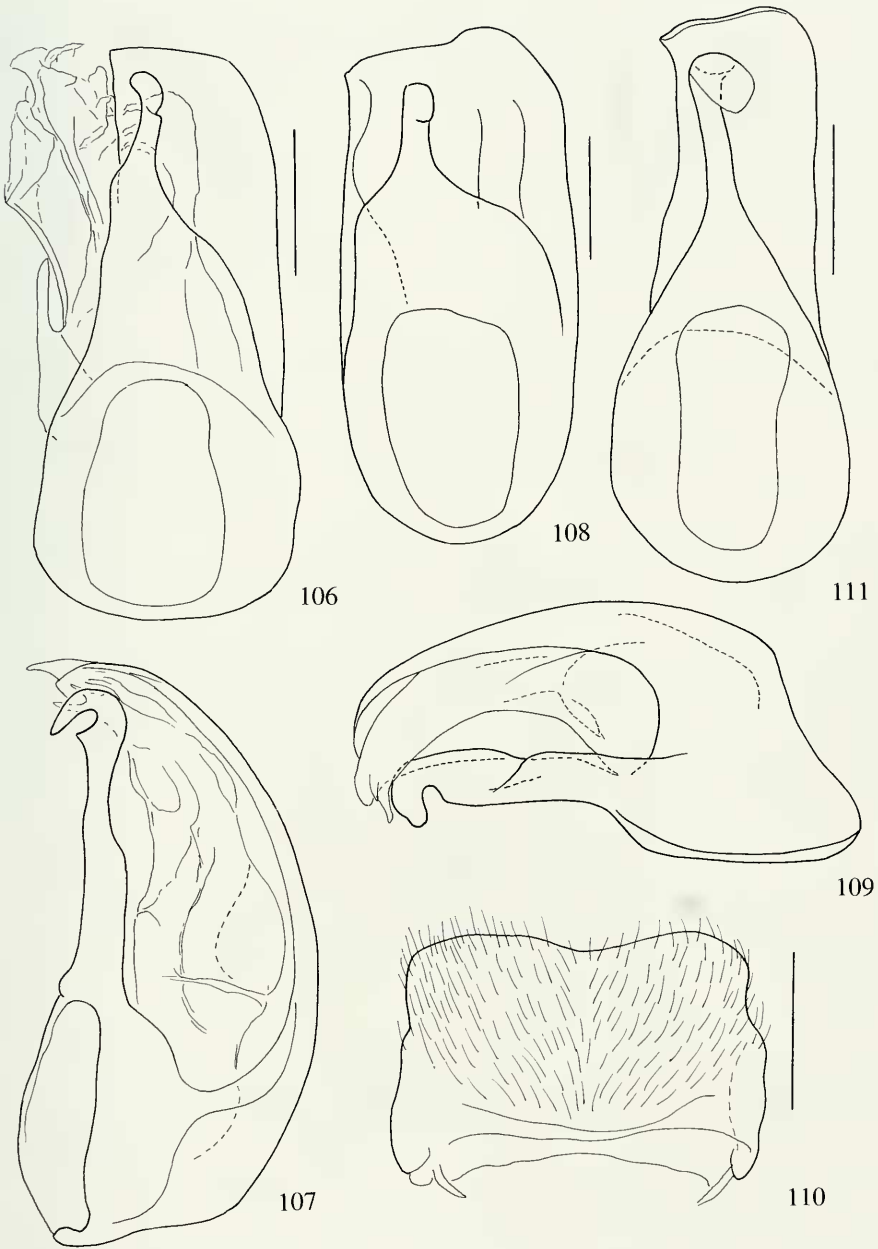
Comments. This species is characterized by the large size of the body and the male abdominal sternite 5 which is expanded, concave and bilobed apically.

***Batrisomalus tuberculatus* sp. n.**

Figs 92, 111

Holotype ♂: SRI LANKA: CENTRAL PROV.: Hakgala, 5 mls SE Nuwara-Eliya, 3.III.62, ExpL # 114:1 (MZLU).

Description. Length 1.65 mm. Body with punctuation mostly fine, pubescence long. Head, eyes included, much wider than long (ratio 40/30). Vertexal hump flat, oblique, raised at each side at occipital margin, with few very fine punctures and in part impunctate. Occipital margin truncate. Dorsolateral areas of head inclined from antennal tubercles toward occipital margin, each with carina above eye, not joined to

FIGS 106 to 111: *Batrisomalus* Raffray

106 and 107. *B. obiectus* sp. n., aedeagus in ventral (106) and lateral (107) views; 108 to 110: *B. pubis* sp. n., aedeagus in ventral (108) and lateral (109) views, abdominal sternite 5 (110); 111: *B. tuberculatus* sp. n., aedeagus in ventral view. Scale bars = 0.1 mm (106 to 109, 111) and = 0.2 mm (110).

postantennal fovea. Vertexal sulci inverted V-shaped, faint, indicated by smooth, arcuate margins delimiting strongly raised antennal tubercles. Interantennal bridge very narrow, deeply impressed, horizontal. Inferior, vertical part of frontoclypeus delimited by transverse crest. Eyes small, with 13 facets, in dorsal view about as long as half of tempora. Antennal tubercles conspicuously large, flattened and covered by coarse, very dense, partly confluent punctation. Antennal segments 3, 4 and 8 equally large, each about 1.2 times as long as wide; segments 5, 6 and 7 even, distinctly longer and slightly wider than segment 4, each about 1.6 times as long as wide; segments 9 and 10 each hardly longer than segment 7, segment 9 distinctly longer than wide, segment 10 slightly longer than wide; segment 11 twice as long as wide, as long as combined length of segments 10, 9 and half of 8. Pronotum distinctly wider than head with eyes (ratio 45/40) and wider than long (ratio 45/38). Disc raised above plan of head, below plan of elytra. Admesal areas of disc almost horizontal, slightly inclined anteriorly, hardly inclined toward lateral sulci. Median sulcus deep, narrow, widened at basal end but not at anterior end, starting distant from base, joined to base by basomedian carina. Margins of lateral humps each with acute denticle. Discal punctation very fine, similar to that on lateroposterior portion of vertex. Elytra comparatively short and wide, about 1.3 times as wide as long, about 1.2 times as long as pronotum and as long as abdomen. Each elytron with 2 basal foveae, distinct sutural stria and discal stria extending to mid-length of disc. Humeral tubercles small, angulate. Punctation fairly coarse. Metatibiae with numerous, particularly long setae. Abdomen with punctation finer than that on elytra, lacking particular long setae. Tergite 1 gradually, slightly narrowed toward apex, longer than tergites 2 and 3 combined (in dorsal view longer than remainder of abdomen); tergite 2 narrowed apically, with lateral margins slightly arcuate.

Male characters. Protibiae almost straight, widened from base to mid-length, from mid-length to apex evenly thick; outer side slightly convex and mesal side slightly concave from mid-length to apex. Mesotibiae (Fig. 92) gradually widened from base about to mid-length, from apical third to apex narrowed, with acute, setose, subapical denticle; outer margin mostly rounded, mesal margin slightly concave posterior to middle. Metatibiae straight, slightly widened toward mid-length, posterior to middle almost evenly thick. Aedeagus (Fig. 111) with ventral process of median lobe strongly narrowed toward middle, evenly narrow up to curved and widened apical portion. Dorsal process of median lobe fairly wide, with slightly sinuate lateral margins and obliquely sinuate apical margin. Internal sac membranous.

Comments. This species may be easily distinguished from its congeners by the flattened, coarsely and very densely punctate antennal tubercles. The aedeagus was accidentally lost while remounting for illustration in lateral view.

Batribolbus Raffray

Fig. 112

Batribolbus Raffray, 1904: 60 type species *Eubatrisis dentipes* Raffray, 1894.

Description. Habitus as Fig. 112. Length 1.35-2.0 mm. Body with dorsal side convex. Head below plan of pronotum, elytra raised above plan of vertex and abdomen. Punctation of body and appendages dense, mostly very fine. Pubescence variably long, particularly long setae present in some species.

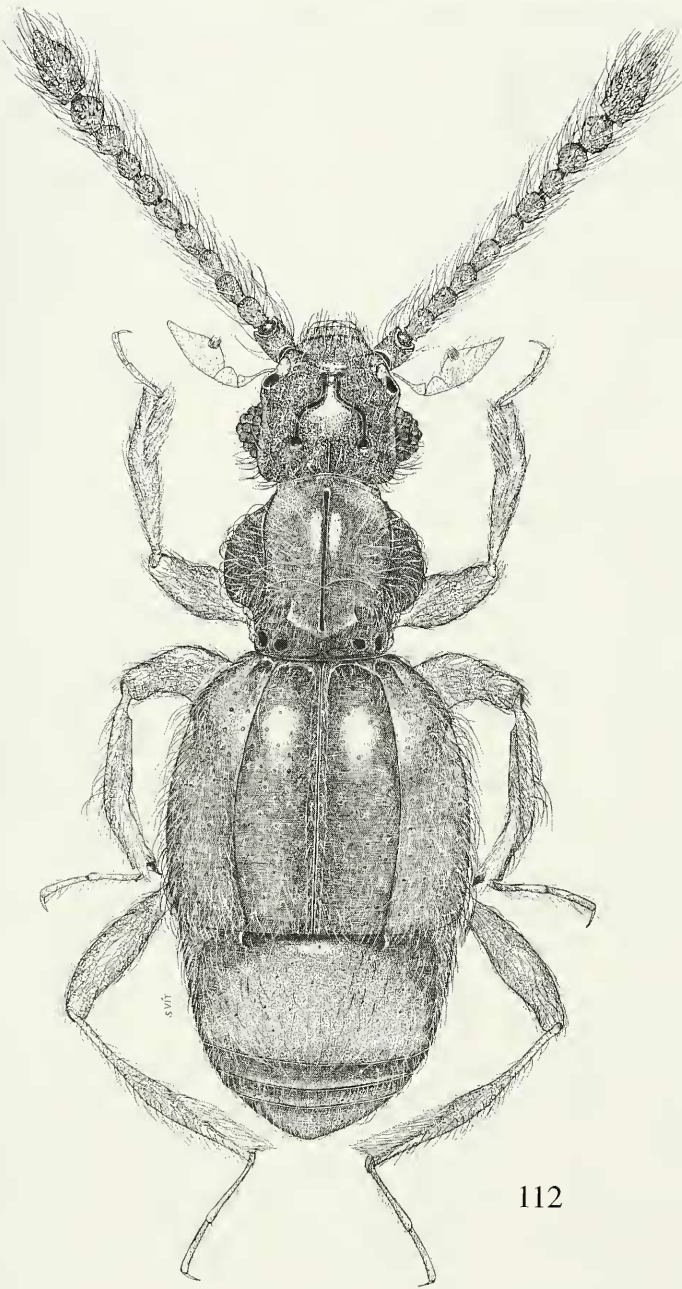


FIG. 112
Batribolbus dentipes sp. n.

Head subpentagonal, about as long as wide, with eyes narrower than pronotum. Lateral contours parallel or almost parallel-sided. Frontal lobe slightly below plan of vertex, impressed between antennal tubercles and inclined toward arcuate anterior margin of frontoclypeus. Antennal fossae distant, frontoclypeus wide, obliquely inclined, distinct in dorsal view. Antennal tubercles very low. Vertexal foveae not in impressions. Posterior arms of vertexal sulcus joined to vertexal foveae, anterior arms curved mesally antennal tubercles, parallel or subparallel on interantennal impression, not joined. Vertex with median carina. Lateral frontal foveae large, situated posterior antennal tubercles. Ocular-mandibular carina touching eye margin. Occipital part of vertex transverse or slightly concave, inclined convexly toward neck. Eyes large, not notched, situated in posterior half of head, multifaceted, facets large. Tempora very short. Ventral side of head fairly long, moderately convex, moderately inclined toward neck, lacking long postgenal setae. Gular foveae close, in common impression, fused in *B. palpator*.

Antennae fairly long. Scape cylindrical, with dorsoapical angles blunt, not prominent, lacking modified setae and glandular orifice. Segments 2 to 8 symmetrical. Pedicel cylindrical, longer than wide, smaller than scape. Segments 4, 6 and 8 slightly smaller than adjoined segments; club 3-segmented. Maxillary palpi fairly long, segment 3 short, narrowed mesally; segment 4 with broad base, short stalk.

Pronotum convex, about as long as wide, cordiform, with one mesal and two lateral sulci, antebasal ridge, four inconspicuous basal foveae, short basomesal carina extending from basal margin to mesal sulcus. Paranotal ridges sinuate in lateral view, shortened. Hypomera smooth, with basolateral foveiform impressions.

Elytra convex, moderately long, longer than pronotum, combined wider than long. Lateral contours broadly arcuate. Each elytron with pair of basal foveae, one subhumeral fovea, entire sutural stria, long discal stria, lateral carina curved anterio-dorsally to join subhumeral fovea and usually extending above fovea up to humeral angle. Basal ridge distinct.

Metasternum swollen, with large median impression. Apical intercoxal margin truncate or concave, lacking prominent process and lacking median notch. Lateral metasternal foveae separated by interval about as large as foveal diameter.

Legs slender, tarsi with segment 2 and 3 similar in length.

Abdomen with 4 tergites visible in dorsal view. Tergite 1 large, longer than tergites 2 to 4 combined, inclined and slightly narrowed apically, not constricted basally, with one pair of lateral carinae at each side, basal impression and two pairs of basal foveae; outer and inner basal foveae close, separated by basodiscal carinae. Tergites 2 to 4 strongly inclined, with single lateral fovea and lacking impressions. Sternite 1 with two pairs of basal foveae, outer and inner foveae widely separated, and with one basodiscal carina arising from near outer basal fovea.

Male sexual characters located on segment 4 of maxillary palpi, mesolegs, rarely also prolegs, metasternum and abdominal sternites. Aedeagus with two ventral and one dorsal processes. Ventral process (possibly homologous to parameres) possesses usually one to three sensory setae. Membranous structure bearing conspicuous bunch of sclerotized, long spiculae (absent from *B. punctatus*) appears associated to left ventral lobe or internal sac. Dorsal process typically arcuate.

Females eyes smaller and elytra shorter than those of males. Abdominal tergite 5 with spine-like projection in *B. pubescens*.

Habitat. Members of *Batribolbus* are founds in a variety of habitats including forest floor litter, rotten wood, under bark and on sandy banks of streams where they may be common. They occur from sea level up to 1950 m above sea level. Several species were collected exclusively at light traps and are represented by males only.

Distribution. Known only from Sri Lanka.

Comments. Several characters support the monophyly of *Batribolbus*, in particular the form of the vertexal sulci, the presence of longitudinal carinae on the first sternite, and the aedeagus usually bearing a spicular bunch. The aedeagal characters indicate monophyletic species groups. Five species, *B. aemulus*, *B. carinatus*, *B. hystrix*, *B. pubescens*, and *B. trebax* possess right ventral process expanded by two lobes, smaller marginal and larger central, and a pair of long setae arising from an area between these lobes; the dorsal process is strongly widened in apical part, the bunch of spiculae is distinct. A second group consists of *B. abas*, *B. dentipes*, *B. furcipes*, *B. incurvus*, *B. onustus*, *B. perturbator* and *B. punctatus*. They have the right ventral process simple, elongate, bearing one to three subapical setae, and the dorsal process narrowed apically, as in the former group. An exception is *B. perturbator* which has the apical part of the dorsal process strongly widened. The bunch of spiculae is also as in the former group, except that in *B. dentipes* which has a distinctive inner lobe bearing wide and poorly sclerotized spiculae. The remaining three species, *B. gracilipes*, *B. mussardi*, and *B. palpalis* lack setae and each of them may represent a distinct group. *Batribolbus gracilipes* has the right ventral process notched, a narrow dorsal process and a distinct spicular bunch. *Batribolbus mussardi* has also a distinct bunch of spiculae but differs by the complex dorsal process. *Batribolbus palpator* is characterized by the reduced number of wide and weakly sclerotized spiculae and very long left ventral process. The latter species is distinctive also by the fused gular foveae and bifurcate lateral mesosternal foveae. Other species (*B. dentipes*, *B. furcipes* and *B. punctatus*) have separate gular foveae and simple lateral mesosternal foveae.

KEY TO SPECIES OF *BATRIBOLBUS*

- 1 Antennal segments 4 to 8 each about as long as wide. Dorsum of body without additional, particularly long setae (unknown in *B. trebax*) 2
- Antennal segments 4 to 8 each, or some of them, longer than wide 6
- 2 Pronotal punctation coarse. Male mesotibiae with large, sinuate process arising from middle of mesal side (Fig. 135). Male sternite 1 with two vertical, admesal processes *B. furcipes* sp. n.
- Pronotal punctation different. Male mesotibiae without large process. Male sternite 1 lacking processes 3
- 3 Pronotal punctation throughout fine 4
- Pronotal punctation coarser on area between sulci than on remainder of disc . 5
- 4 Male mesotibiae fairly abruptly narrowed in apical third. Aedeagus with middle ventral process slightly arcuate and strongly widened at tip; spiculae diverging, arising from wide process (Fig. 154) . . . *B. carinatus* sp. n.

- Male mesotibiae angulate at mid-length and gradually narrowed from middle to apex. Aedeagus with middle ventral process strongly arcuate and narrow at tip; spiculae converging, arising from left ventral process (Fig. 181) *B. trebax* sp. n.
- 5 Female tergite 5 with basomedian, spine-like process. Mesal edge of male mesotrochanters with basal process and apical tubercle. Apical part of dorsal process of aedeagus expanded to form two lobes (Fig. 174) *B. pubescens* (Raffray)
- Female tergite 5 without process or protuberance. Mesal edge of male mesotrochanters with basal process, lacking apical tubercle. Apical part of dorsal process of aedeagus expanded, forming large lobe (Fig. 152) *B. aemulus* sp. n.
- 6 Antennal segments 4, 6 and 8 each as long as wide or wider than long, segments 5 and 7 each longer than wide. Dorsum of body without additional, particular long setae 7
- Antennal segments 4 to 7 or to 8 each longer than wide. Dorsum of body with additional, particularly long setae (unknown in *B. incurvus*) 9
- 7 Punctuation between pronotal sulci distinctly coarser than on elytra and on posterior part of vertex. Male mesofemora curved and flattened on mesal side (Fig. 142), mesotibiae sinuate, with large apical denticle (Fig. 147). Male mesotrochanters with basal spine-like process, mesofemora lacking denticle or spine-like process. Male metasternal ridges dense pubescence *B. mussardi* sp. n.
- Punctuation on pronotum even, very fine, similar to that on elytra and posterior part of vertex. Male mesofemora straight, male mesotibiae with small apical denticle, or lacking denticle 8
- 8 Male with segment 4 of maxillary palpi swollen, flattened and granulate dorsally and bearing basodorsal process (Figs 130, 131); mesotrochanters with short process at middle of mesal margin (Fig. 177) *B. palpator* (Raffray)
- Male with segment 4 of maxillary palpi lacking obvious sexual characters (Fig. 116); mesotrochanters with long process at base of mesal margin *B. hystrix* sp. n.
- 9 Body length 1.75-2.0 mm. Male mesofemora with basal spine on mesal side (Fig. 134). Male segment 4 of maxillary palpi with basodorsal bunch of modified setae (Fig. 117) *B. dentipes* (Raffray)
- Body length 1.35-1.75 mm. Male mesofemora lacking spine, or with basal spine-like process. Male segment 4 of maxillary palpi usually without bunch of modified setae 10
- 10 Male with segment 4 of maxillary palpi strongly modified, flattened dorsally, conic apically (Figs 127, 128); mesal side of mesotibiae bearing, in addition to apical spine-like denticle, spine arising from close to tibial mid-length (Fig. 144); mesotrochanters with large, curved, subapical process (Fig. 143) *B. onustus* sp. n.

- Male segment 4 of maxillary palpi not flattened dorsally and conic apically; male mesotibiae with apical denticle, lacking spine on mesal side; mesotrochanteral process different 11
- 11 Male mesotrochanters lacking spine-like process. Male mesofemora with basomesal process 12
- Male mesotrochanters with spine-like process. Male mesofemora lacking process 13
- 12 Pronotum conspicuously coarsely punctate between mesal and lateral sulci *B. incurvus* sp. n.
- Pronotum throughout very finely punctate *B. abas* sp. n.
- 13 Vertex throughout coarsely punctate. Male mesotrochanters with bifid process arising from middle of mesal side (Fig. 145) *B. punctatus* sp. n.
- Posterior part of vertex very finely punctate. Male mesotrochanters with single, simple process 14
- 14 Male mesotrochanters with basal, curved process (Fig. 138), male mesotibiae with apical hook-like process (Fig. 139) *B. pertubator* sp. n.
- Male mesotrochanters with process arising from middle of mesal margin and additional small denticle at centre of ventral side (Fig. 136). Male mesotibiae with oblique apical denticle (Fig. 137) . . . *B. gracilipes* sp. n.

***Batribolbus abas* sp. n.**

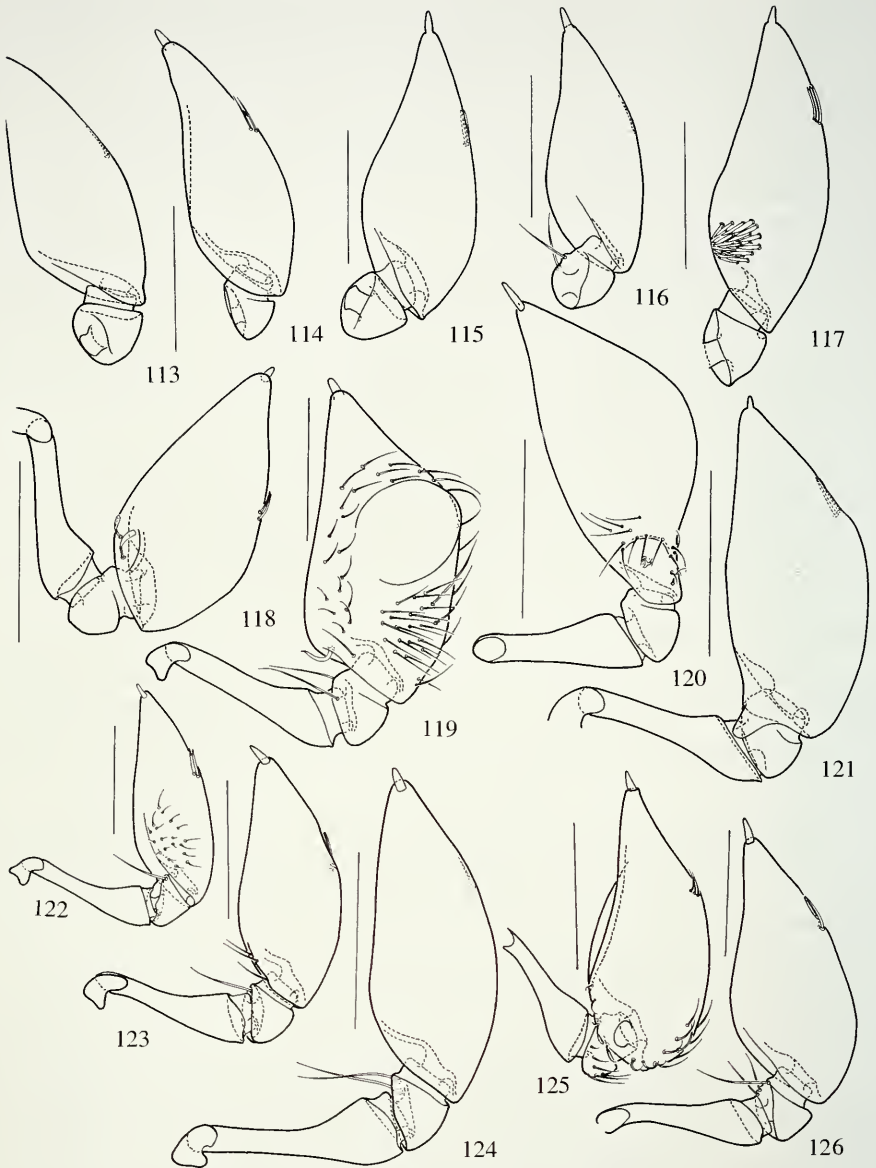
Figs 148 - 151

Holotype ♂: SRI LANKA: SABARAGAMUWA PROV.: Deerwood, Kuruwita 6 mls NNW Ratnapura, 18.II.62, ExpL # 90:II:1, indigenous forest, sieved from leaves, on forest floor (MZLU).

Paratypes: SRI LANKA: SABARAGAMUWA PROV.: same data as holotype, 2 ♂, (MZLU, MHNG).

Description. Length 1.75 mm. Head with lateral contours concave; anterior arms of frontal sulci extending on to interantennal impression and slightly converging or parallel; vertexal carina ending in minute impression anterior to line of anterior margin of vertexal foveae; punctuation fairly dense and coarse on most of anterior surface, very fine between sulci and throughout vertex. Punctuation even on antennal tubercles. Antennal segments 4, 6 and 8 slightly longer than wide or segment 8 as long as wide; segments 3, 5 and 7 distinctly longer than wide, segment 9 elongate. Pronotum 0.40 long, 0.43 mm wide; median sulcus extending up to anterior seventh of disc; punctuation coarse and very dense on large areas between sulci, sparse and very fine on lateral humps. Humeral angles of elytra carinate. Punctuation on elytra and abdominal terga finer than on vertex. Pubescence long, additional long setae on head, pronotum, elytra and abdomen.

Male characters. Segment 4 of maxillary palpi with slightly impressed basal side, convex outer side, concave mesal side. Metasternum very finely punctate, bearing short, recumbent pubescence. Mesal area of metasternum swollen, with two shallow admesal impressions. Area laterally admesal impressions raised to form two ridges inclined steeply toward apical margin, close to metacoxal edges. Profemora slightly swollen, with flattened mesal side. Mesotrochanters without obvious sexual characters. Mesofemora curved, swollen, with mesal side concave, and with large,



FIGS 113 to 126. *Batribolbus* Raffray, male maxillary palpi

113: *B. mussardi* sp. n.; 114: *B. pubescens* (Raffray); 115: *B. carinatus* sp. n.; 116: *B. hystrix* sp. n.; 117: *B. dentipes* (Raffray); 118: *B. punctatus* sp. nov.; 119: 120: *B. gracilipes* sp. n.; 121: *B. palpator* (Raffray); 122: *B. trebax* sp. n.; 123: *B. incurvus* sp. n.; 124: *B. pertubator* sp. n.; 125: *B. furcipes* sp. n.; 126: *B. aemulus* sp. n. Scale bars = 0.1 mm.

straight, spine-like process arising from base, near tip of trochanters (Fig. 151). Mesotibiae widened, curved, with flattened mesal side and large, slightly curved, apical denticle (Fig. 150). Metalegs without obvious sexual characters. Abdominal sternites 1 to 5 slightly flattened in middle. Aedeagus (Figs 148, 149) with ventral process extended by right lobe bearing two subapical setae and narrow, left lobe. Setae grouped in to two tufts partly overlapping. Dorsal process arcuate, widened and trilobed apically.

Comments. This species is characterized by the lack of long setae on the dorsal side of the body, the comparatively elongate flagellar segments, the fine pronotal punctation, and the pattern of the male characters on the metasternum and legs.

***Batribolbus aemulus* sp. n.**

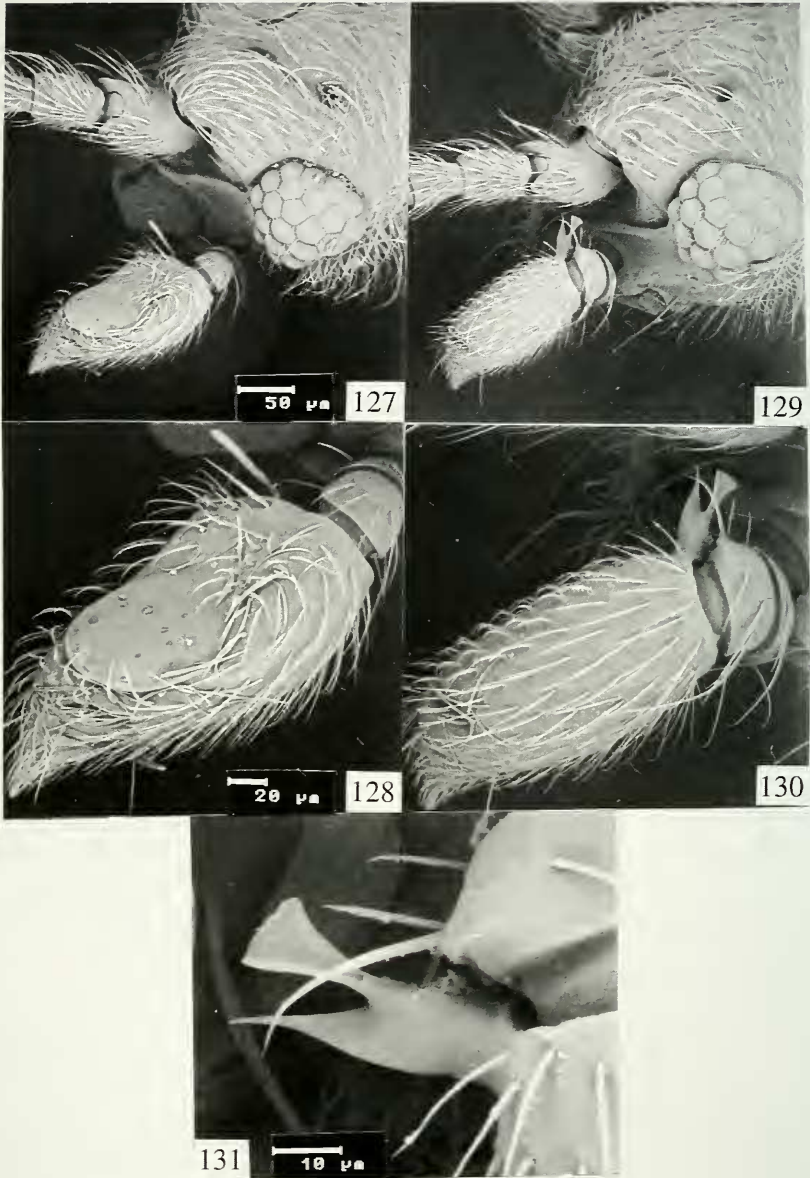
Figs 126, 132, 152, 153

Holotype ♂: SRI LANKA: WESTERN PROV.: Colombo Dist., Beyegama, sea level, 20-21.VIII.73, G. Ekis (NMNH).

Paratypes: SRI LANKA: WESTERN PROV.: Colombo Dist., Hanwella Resthouse, 200ft, black light, 2.X.76, 200 ft, G. F. Hevel, R. H. Dietz, S. Karunanatne, D. W. Balasooriya, 1 ♂ (NMNH); SABARAGAMUWA PROV.: Ratnapura Dist., Gilimale Lumbert Hill, 7.VIII.73, 115 feet, G. Ekis, 2 ♂ (NMNH, MHNG); same but black light, G. F. Hevel, R. H. Dietz, S. Karunanatne, D. W. Balasooriya, 1 ♂ (MHNG).

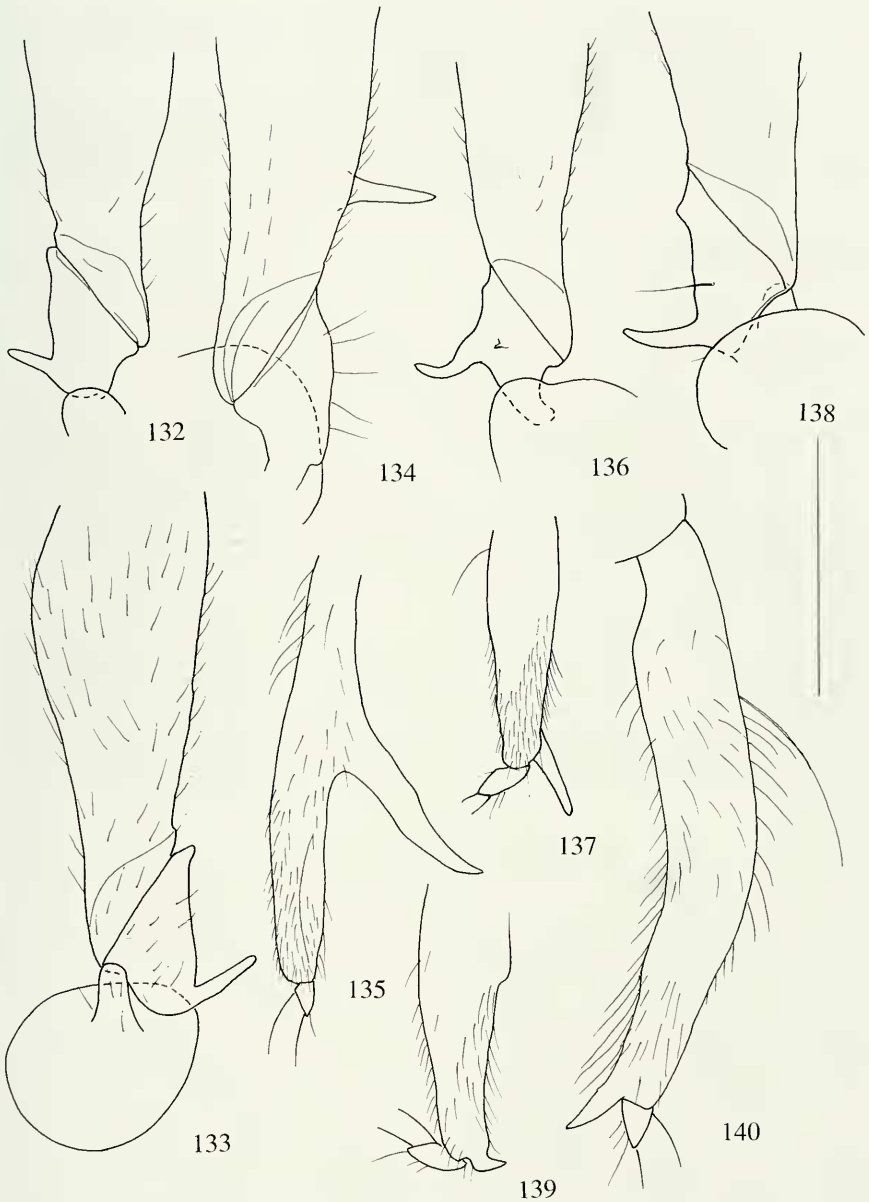
Description. Length 1.6-1.7 mm. Head with lateral contours slightly concave; anterior arms of frontal sulci extending on to interantennal impression and parallel or slightly converging; vertexal carina ending in minute impression, about in same line as anterior margin of vertexal foveae; punctation dense, fairly coarse on most of anterior surface, very fine between sulci and throughout vertex. Antennal tubercles with punctation denser on mesal side than on dorsal side and on frontoclypeus. Antennal segments 3 to 8 each about as long as wide, segments 4, 6 and 8 subequal, slightly smaller than segments 5 and 7; segment 9 globular, as long as wide; segment 10 slightly wider than long. Pronotum 0.39-0.42 mm long and wide; median sulcus extending up to anterior sixth of disc; punctation fairly dense and very fine near longitudinal sulci and on lateral humps, distinctly coarser on large areas between sulci. Humeral angles of elytra carinate. Punctation on elytra and abdominal terga almost as fine as that on vertex. Pubescence uniformly long, additional long setae absent.

Male characters. Segment 4 of maxillary palpi with flattened basal side, slightly concave mesal side, convex outer side (Fig. 126). Median part of metasternum impressed, very finely punctate, bearing short, recumbent pubescence. Metasternum with two large, apical processes arising from near inner margin of metacoxa, orientated apicoventrally, curved near tip ventrally. Prolegs and metalegs without obvious sexual characters. Mesotrochanters with ventral, elongate ridge joined to basal, straight or slightly curved, spine-like process (Fig. 132). Apical angle of mesotrochanters slightly prominent and rounded. Mesofemora moderately swollen. Mesotibiae thickened toward middle, moderately narrowed apically, with small, blunt, apical tooth. Abdominal sternite 1 flattened in middle, sternites 2 and 3 slightly impressed in middle, sternite 5 deeply impressed toward mesal line. Aedeagus (Figs 152, 153) with lateral lobes of right ventral process almost perpendicular to axis of median lobe, central lobe large, gradually narrowed (in specimens from Gilimale Lumbert Hill



FIGS 127 to 131: *Batribolbus* Raffray, males

127 and 128: *B. onustus* sp. n., head at laterodorsal view, with basal segments of antenna and maxillary palpus, scale bar = 50 μm (127), segment 4 of maxillary palpus, scale bar = 20 μm (128); 129 to 131: *B. palpator* (Raffray), head at laterodorsal view, with basal antennal segments and maxillary palpus, scale bar = 50 μm (129), segment 4 of maxillary palpus, scale bar = 20 μm (130), basodorsal apophyse of segment 4 of maxillary palpus, scale bar = 10 μm (131).



FIGS 132 to 140: *Batribolbus* Raffray, males

132: *B. aemulus* sp. n., mesotrochanter and base of femur; 133: *B. carinatus* sp. n., mesotrochanter with coxa and basal part of femur; 134 and 140: *B. dentipes* sp. n., mesotrochanter and basal part of femur (134), mesotibia (140); 135: *B. furcipes* sp. n., mesotibia; 136 and 137: *B. gracilipes* sp. n., mesotrochanter and basal part of femur (136), apical part of mesotibia (137); 138 and 139: *B. pertubator* sp. n., mesotrochanter with base of femur (138), apical part of mesotibia (139). Scale bar = 0.2 mm.

narrower than in other specimens), left ventral process short, overlapped by setal tuft. Pair of long setae arising from area between lateral and central processes. Dorsal process flat, curved, widened in apical part.

Comments. This is one of the species having comparatively short flagellar segments. It may be distinguished from congener with similar antennae by the uneven pronotal punctation, the male mesotrochanter lacking an apical tubercle and the female abdomen lacking an apical process.

***Batribolbus carinatus* sp. n.**

Figs 115, 133, 154, 155

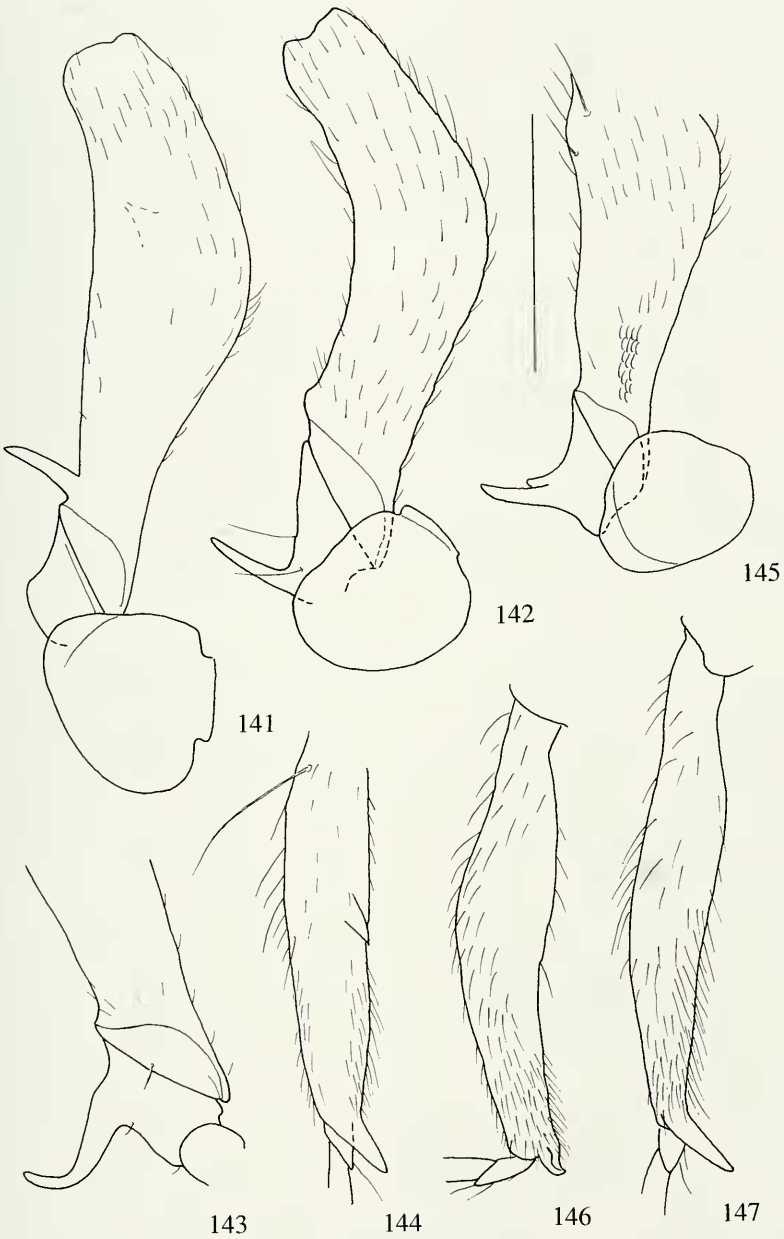
Holotype ♂: SRI LANKA: CENTRAL PROV.: above Talatuoya, 850-1000m, forest remnants, 27.I.70, ExpG # 27a (MHNG).

Paratypes: SRI LANKA: CENTRAL PROV.: Madugoda, 1200m, 30.I.64, R. Mussard, 3 ♂, 5 ♀ (MHNG, PCSK); same data but 1500m, 2 ♂, 2 ♀ (MHNG).

Description. Length 1.7-1.8 mm. Head with lateral contours hardly concave; anterior arms of frontal sulci extending on to interantennal impression, parallel; vertexal carina ending in small, central, foveiform impression, slightly anterior to line of vertexal foveae. Punctation dense and coarse on antennal tubercles and on anterio-lateral portions of vertex up to line of vertexal foveae, consisting of punctures about as large as or larger than puncture intervals; frontoclypeus with punctation dense but slightly finer. Punctation on large central and posterior parts of vertex fairly dense and very fine. Antennal segments 3 to 8 each as long as wide, segments 4, 6 or 8 subequal, slightly smaller than segments 5 and 7; segment 9 about as long as wide; segment 10 distinctly wider than long. Pronotum 0.39-0.42 mm long, 0.42-0.44 mm wide; median sulcus extending up to anterior seventh of disc. Humeral angles of elytra carinate. Pronotum, elytra and abdominal tergites with punctation fairly dense and very fine, similar to that on posterior part of vertex. Pubescence uniformly long, additional long setae absent.

Male characters. Segments 4 of maxillary palpi with basoventral impression (Fig. 115). Metasternum concavely impressed in middle portion, flat between metacoxae. Mesal metasternal impression delimited laterally by margins raising gradually apically to form each longitudinal tubercle above metacoxae. Metasternal punctation very fine, sparse anteriorly, dense posteriorly and on tubercles; pubescence fairly long. Prolegs and metalegs without obvious sexual characters. Mesotrochanters with basomesal, slender, curved, spine-like process; apical angle extended to form small tooth (Fig. 133). Mesotibiae slightly curved, becoming gradually thicker apically, rather abruptly narrowed in apical third of mesal side; with short, robust, apical denticle. Abdominal sternites 1 and 2 flattened in middle, sternite 3 slightly impressed in middle, sternite 5 deeply impressed toward median line. Aedeagus (Figs 154, 155) with lateral lobe of right ventral process small, oblique; middle lobe widened apically, forming acute angle; left process small, overlapped by bunch of spiculae. Pair of long setae arising from interval between right and middle lobes. Dorsal process flat, widened apically.

Comments. This species may be distinguished by the fine pronotal punctation, the comparatively short flagellar segments and the male mesotibiae fairly abruptly narrowed apically.



FIGS 141 to 147: *Batribolbus* Raffray, males

141 and 146: *B. incurvus* sp. n., mesofemur with trochanter (141), mesotibia (146); 142 and 147: *B. mussardi* sp. n., mesofemur with trochanter (142), mesotibia (147); 143 and 144: *B. onustus* sp. n., mesotrochanter with base of femur (143), mesotibia (144); 145: *B. punctatus* sp. n., mesotrochanter with basal part of femur. Scale bar = 0.2 mm.

Batribolbus dentipes (Raffray)

Figs 112, 117, 134, 140, 156, 157

Eubatriscus dentipes Raffray, 1894a: 450.*Batribolbus dentipes*; Raffray, 1904: 102; Jeannel, 1961: 435.

Type material. Two syntypes, 1 ♂, 1 ♀: SRI LANKA: CENTRAL PROV.: Nuwara Eliya, E. Simon (MNHN).

Additional material examined. SRI LANKA: CENTRAL PROV.: Nuwara Eliya, 1800-1950m, at foot of Pidurutalagala, 29.I.70, ExpG # 33, 1 ♀ (MHNG); same data but ca 1950m, 15.II., ExpG # 69b, 10 ♂, 14 ♀ (MHNG, PCSK); Nuwara Eliya, 1800m, I.65, R. Mussard, 8 ♂, 26 ♀ (MHNG); Hakgala, 1700m, 28.I.70, sandy bank of a stream, ExpG # 30b, 1 ♂, 3 ♀ (MHNG); Horton Plains, forest, 17.IV.73, Troquet, 1 ♀ (MHNG); Horton Plains, 6700 ft, 11 mls SSE Nuwara Eliya, indigenous forest slope, sieven in debris, 19-20.III.62, ExpL # 162, 1 ♂ (MHNG); hill east of Hatton, 1400m, along irrigation canal, 9.II.70, ExpG # 55b, 5 ♂, 1 ♀ (MHNG); Mahaweli Ganga 8 mls WSW Nuwara Eliya, 18-19.III.62, at light, ExpL # 159, 1 ♂ (MZLU); Madugoda, 1400m, 28.I.64, R. Mussard, 1 ♂ (MHNG); Dikoya, 1500m, 24-31.3.73, G. Benick, 1 ♂ (MHNG); Mudduk, 5500 ft., 5 mls NW Nuwara Eliya, 4. III. 62, at small stream, ExpL # 117, 1 ♂ (MZLU); Ramboda, 7 mls NW Nuwara Eliya, ravin with stream, under stones, 4.III.62, ExpL # 118, 1 ♂ (MZLU); Foothill of Knuckle Mts, 10 mls ENE Kandy, at spring under stones, 11.III.62, ExpL # 129, 2 ♂ (MZLU); Knuckle Mts, 15 mls NE Kandy, 11. III. 62, ravine with stream, at light, ExpL # 132, 2 ♂ (MZLU, MHNG); UVA PROV.: Haputale, 1350m, 23.I.70, ExpG # 19b, sandy bank of a stream, 2 ♂, 3 ♀ (MHNG); SABARAGAMUWA PROV.: Maratenna at 4500 ft., 7 mls N Balangoda, 22.II.62, ExpL # 98, sieved in debris, 5 ♂, 5 ♀ (MZLU); Rakwana, 27-28.II.62, ExpL # 100, light trap, 1 ♂ (MZLU); Karagal Oya at 1900 ft., 3 mls ENE Belihul Oya, 2.III.63, ExpL # 110, sieved in debris, 1 ♂ (MHNG); SRI LANKA: Ceylon, Coll. Cl. Müller, 1 ♂ (ZSMC).

Description. Length 1.75-2.0 mm. Head with lateral contours parallel, straight; anterior arms of frontal sulci parallel, extending on to interantennal depression; vertexal carina extending up to line or slightly anterior to line of anterior margins of vertexal foveae, not ending in impression, sometimes raised to form minute point. Mesal and posterior sides of antennal tubercles with fairly dense and coarse punctation, frontoclypeus and vertex with very fine and sparse punctation. Antennal segments 3 to 8 each slightly longer than wide, segments 3, 4, 6 and 8 subequal, segments 5 and 7 equally large, larger than adjoining segments; segment 9 distinctly elongate; segment 10 about as long as wide. Pronotum 0.42-0.46 mm long, 0.47-0.50 mm wide; median sulcus extending on to anterior sixth of disc. Humeral angles of elytra carinate. Punctation of pronotum, elytra and abdomen very fine. Pubescence long; head, pronotum, elytra and abdomen with several additional, very long setae.

Male characters. Segment 4 of maxillary palpi comparatively slender, bearing antebasal, setose patch (Fig. 117). Metasternum swollen in middle, strongly inclined toward margin of metacoxal process. Median portion of metasternum very finely punctate, with fairly long, semi-erect pubescence forming two dense, admesal patches. Protrochanters angulate. Protibiae thickened in middle portion, curved in apical half, with inner side flattened in apical portion. Mesotrochanters flattened, with row of perpendicular, marginal setae (Fig. 134). Mesofemora swollen, curved, in apical half almost evenly broad, with large spine on mesal side near base (Fig. 134) and robust pubescence in apical fourth. Mesotibiae abruptly narrowed near base, evenly wide and straight toward apical third, curved and narrowed in apical third, with robust and curved apical denticle (Fig. 140). Metalegs without obvious sexual characters. Abdominal sternites lacking particular sexual characters. Aedeagus (Figs

156, 157) with right ventral process very long, arcuate, denticulate in middle, bearing two subapical setae, lacking lobes; left ventral process moderately long, blunt. Dorsal process large, curved, flat.

Comments. This species is characterized by the male mesofemora bearing a large spine, the presence of a setose patch at base of the segment 4 of the maxillary palpi in combination with the comparatively large size of the body, the presence of long dorsal setae and the elongate flagellar segments.

Batribolbus furcipes sp. n.

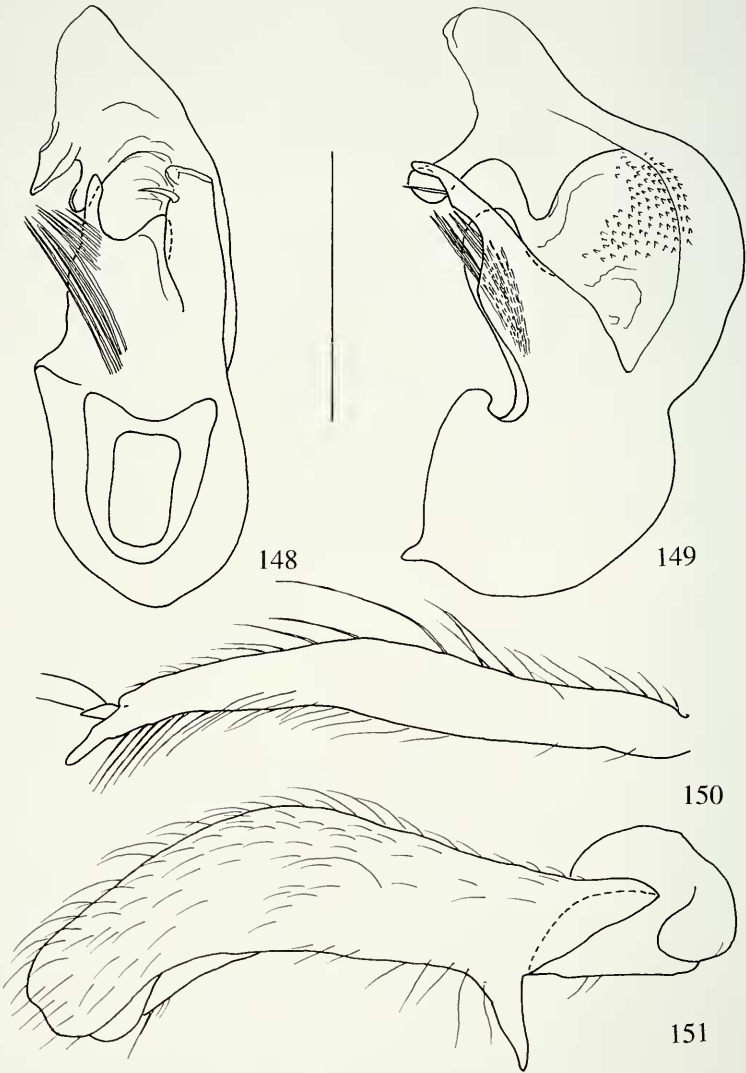
Figs 125, 135, 158, 159

Holotype ♂: SRI LANKA: CENTRAL PROV.: forest at Hasalaka, near Weragamtota, ca 250m, 11.II.70, ExpG # 59 (MHNG).

Paratypes: SRI LANKA: CENTRAL PROV.: same data as holotype, 12 ♂, 9 ♀ (MHNG, PCSK); same data but 18.I., ExpG # 9, 1 ♀ (MHNG); Weragamtota, 21.I.65, R. Mussard, 5 ♂, 13 ♀ (MHNG, PCSK); UVA PROV.: Diyaluma Falls, forest below Waterfalls, ca 400m, 23.I.70, ExpG # 21, 5 ♂, 12 ♀ (MHNG); same data but 25.I., ca 450m, sieved litter at Waterfalls, ExpG # 26, 7 ♂, 6 ♀ (MHNG); Diyaluma Falls, 600m, 17.I.65, 6 ♂, 22 ♀, R. Mussard (MHNG); forest above Wellawaya, 300m, 25.I.70, ExpG # 25, 6 ♂, 1 ♀ (MHNG); Wellawaya, 300m, 17.I.65, R. Mussard, 2 ♀ (MHNG); Westminster Abbey 25 mls ESE Bibile, 7.III.62, ExpL 119:III, 12 ♂, 19 ♀ (MZLU, MHNG); Yalakumbura, 1300 ft., 5 mls SSW Bibile, ravine with small stream, 13.III.62, ExpL # 140, 1 ♂, 1 ♀ (MZLU); Badulla Dist., 5 mls E Mahiyangana Hasalaka, 200 ft., 16.XI.74, C. Gans, P. Fernando & S. Farook, 1 ♂ (NMNH); Ella, 16.III.73, M. Tronquet, 1 ♂ (MHNG); SABARAGAMUWA PROV.: Belihul Oya, 14.III.77, M. Tronquet, 3 ♂, 1 ♀ (MHNG).

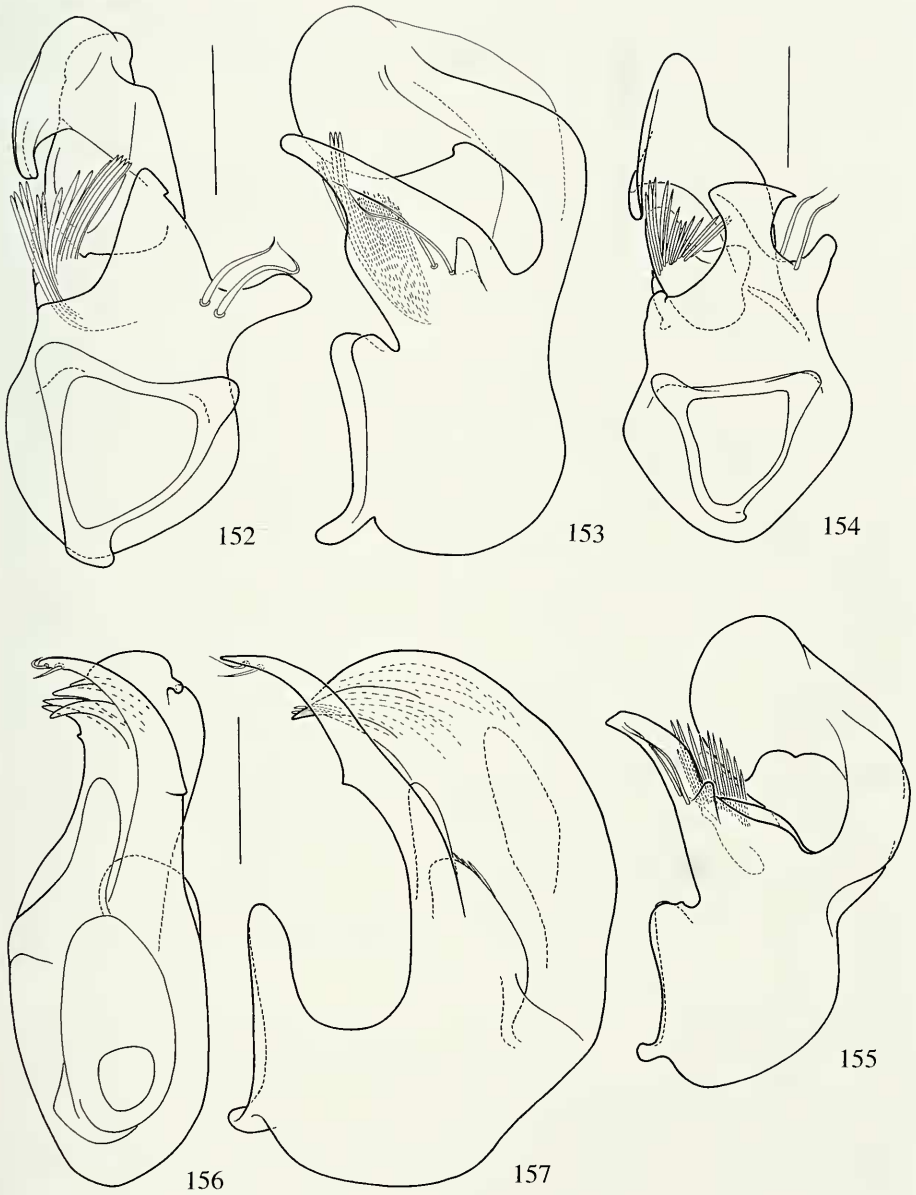
Description. Length 1.60-1.75 mm. Head with lateral contours hardly concave; anterior arms of frontal sulci extending on to interantennal impression and parallel; vertexal carina reaching slightly anterior to line of vertexal foveae. Punctuation evenly coarse and dense, or slightly finer on vertex than on and near antennal tubercles. Antennal segment 3 longer than wide, segment 4 to 8 each as long as wide; segment 5 and 7 slightly larger than segments 4 and 6; segment 9 about as long as wide; segment 10 distinctly wider than long. Pronotum 0.34-0.36 mm long, 0.36-0.38 mm wide; median sulcus extending up to apical seventh of disc. Pronotal punctuation dense and coarse, as coarse as or coarser than vertexal punctuation, on lateral humps distinctly finer and sparser; median sulcus extending onto anterior seventh of disc. Humeral angles of elytra carinate. Elytral punctuation dense and coarse, consisting of punctures not well delimited. Abdominal punctuation distinctly finer than that on elytra and pronotum, consisting of well-delimited punctures. Pubescence long, without additional, particularly long setae.

Male characters. Segment 4 of maxillary palpi (Fig. 125) with basodorsal, sharply delimited foveiform impression adjoining shallow, smooth, transverse impression. Metasternum with median portion almost evenly convex, subapical impression small and shallow. Metasternal pubescence short, recumbent. Prolegs and metalegs without obvious sexual characters. Mesotrochanters lacking denticles or processes. Mesofemora swollen. Mesotibiae robust, sinuate, with conspicuously long, sinuate process raising from middle of mesal side (Fig. 135). Abdominal sternite 1 with pair of large, admesal processes. Admesal processes vertical, gradually narrowed toward tip, triangular in lateral view, bearing very short setae at tip. Surface between and posterior processes smooth. Sternites 2 to 4 slightly impressed in middle. Sternite 5



FIGS 148 to 151: *Batribolbus abas* sp. n.

148 and 149: Aedeagus in ventral (148) and lateral (149) views; 150: male mesotibia; 151: male mesofemur with trochanter. Scale bar = 0.2 mm.



FIGS 152 to 157: *Batribolbus* Raffray, aedeagi

152 and 153: *B. aemulus* sp. n., ventral (152) and lateral (153) views; 154 and 155: *B. carinatus* sp. n., ventral (154) and lateral (155) views; 156 and 157: *B. dentipes* (Raffray), ventral (156) and lateral (157) views. Scale bars = 0.1 mm.

flat. Aedeagus (Figs 158, 159) with right ventral process narrowed in middle, bearing subapical seta, lacking lobes; left process longer, arcuate, partly overlapped by bunch of spiculae. Dorsal process narrow, arcuate, separated distally in one simple and acute arm and one bifid arm.

Comments. See under *B. mussardi*.

***Batribolbus gracilipes* sp. n.**

Figs 120, 136, 137, 160, 161

Holotype ♂: SRI LANKA: WESTERN PROV.: Galle Dist. Kanneliya Jungle, 13-16 August 72, K.V. Krombein, P. B. Karunaratna (NMNH).

Paratype ♂: SRI LANKA: SABARAGAMUWA PROV.: Deerwood, Kuruwita 6 mls NNW Ratnapura, 17-22.II.62 Expl # 90:1 (MZLU).

Description. Length 1.35-1.50 mm. Head with lateral contours straight, parallel-sided; anterior arms of frontal sulci not extending on to interantennal impression; vertexal carina extending anterior to line of vertexal foveae, central vertexal impression absent. Frontoclypeus and lateral portions of vertex with coarse and dense punctation, punctures partly larger than puncture intervals. Middle and posterior portions of vertex sparsely and very finely punctate. Antennal segments 3 to 8 each longer than wide, segments 3 and 4 equally large, segments 5 and 7 about 1/9 longer than segments 3 or 4, segment 6 slightly shorter than segment 4; segment 8 as long as and wider than segment 4; segment 9 elongate; segment 10 as long as wide, globular. Pronotum 0.35-0.36 mm long, 0.37 mm wide; median sulcus extending almost up to apical sixth of disc; punctation very fine and sparse near median sulcus, more dense and less fine more laterally; comparatively coarse pronotal punctures smaller than coarse punctures on head. Humeral angles of elytra carinate. Elytra and tergites very finely punctate, with short pubescence and several additional long setae.

Male characters. Segment 4 of maxillary palpi (Fig. 120) thick, with antebasal, round, sharply delimited impression on mesal side; mesal side slightly concave posterior impression, outer side convex. Middle portion of metasternum shallowly impressed, bearing sparse and very short, recumbent pubescence; with pair of almost vertical spines each bearing two apical setae. Metasternal spines situated at each side of median impression, close to lateral metasternal foveae. Prolegs and metalegs without obvious sexual characters. Mesotrochanters with central spine raising ventrally and bearing apical setae, and long, narrow, sinuate process arising from centre of posterior edge (Fig. 136). Mesotibiae straight, thickest anterior to apical third, with long, oblique, apical denticle (Fig. 137). Middle part of abdominal sternites 1 to 3 flattened. Aedeagus (Figs 160, 161) with right ventral process short and broad, deeply notched at apex; left process narrow, hook-like, partly overlapped by spicular bunch. Dorsal process slender, curved, with subapical spine-like tooth.

Comments. This species may be distinguished by the male mesotrochanters bearing a spine-like process and a small denticle and the male mesotrochanters with an oblique apical denticle, in combination with the comparatively small size of the body, the absence of long setae on the dorsum, and the flagellar segments 4 to 7 each longer than wide. See also comments under *B. pertubator*.

Batribolbus hystrix sp. n.

Figs 116, 162, 163

Holotype ♂: SRI LANKA: SABARAGAMUWA PROV.: Ratnapura Dist., Nivitigala, Kiribatagala Estate, 4.VIII.73, 300 ft, G. Ekis (NMNH).

Description. Length 1.6 mm. Head with lateral contours very weakly sinuate; anterior arms of frontal sulci converging up to interantennal impression; vertexal carina extending slightly anterior to level of anterior margins of vertexal foveae, reaching minute, central impression. Punctuation fine or very fine and fairly dense on frontoclypeus and on large, central part of vertex, dense and less fine on lateral portions of vertex and on antennal tubercles. Antennal segments 4, 6 and 8 subequal in size, each about as long as wide; segments 3, 5 and 7 slightly longer than segments 4 or 6, each slightly longer than wide; segment 9 slightly longer than wide; segment 10 subglobular, about as long as wide. Pronotum 0.32 mm long, 0.33 mm wide; median sulcus extending up to anterior eighth of disc. Humeral angles of elytra carinate. Punctuation evenly very fine on pronotum, elytra and abdomen; elytral and abdominal pubescence short, additional long setae absent.

Male characters. Segment 4 of maxillary palpi without particular characters (Fig. 116). Metasternal centre with large, fairly deep and pubescent impression and two large, cylindrical processes raising from posterior edge. Metasternal processes touching inner margin of each coxa, truncate at apex, orientated apically. Prolegs and metalegs without obvious sexual characters. Mesotrochanters with robust, curved, basal process raising from mesal edge. Mesotibiae gradually thickened from base toward mid-length, narrowed on mesal side of apical half, with small, narrow, curved, apical denticle. Middle part of abdominal sternites 1 to 3 flattened. Aedeagus (Figs 162, 163) with right ventral process extended by two oblique, blunt, ventral lobes; one pair of long setae arising from notch between processes. Bunch of very long spiculae arising from near left side of basal bulb. Dorsal process large, widened apically.

Comments. This species is characterized by the palpi lacking obvious sexual characters, the male mesotrochanters bearing a long basal process, in combination with the presence of long setae on the dorsal side of the body and the antennal segments 4 and 6 each as long as wide.

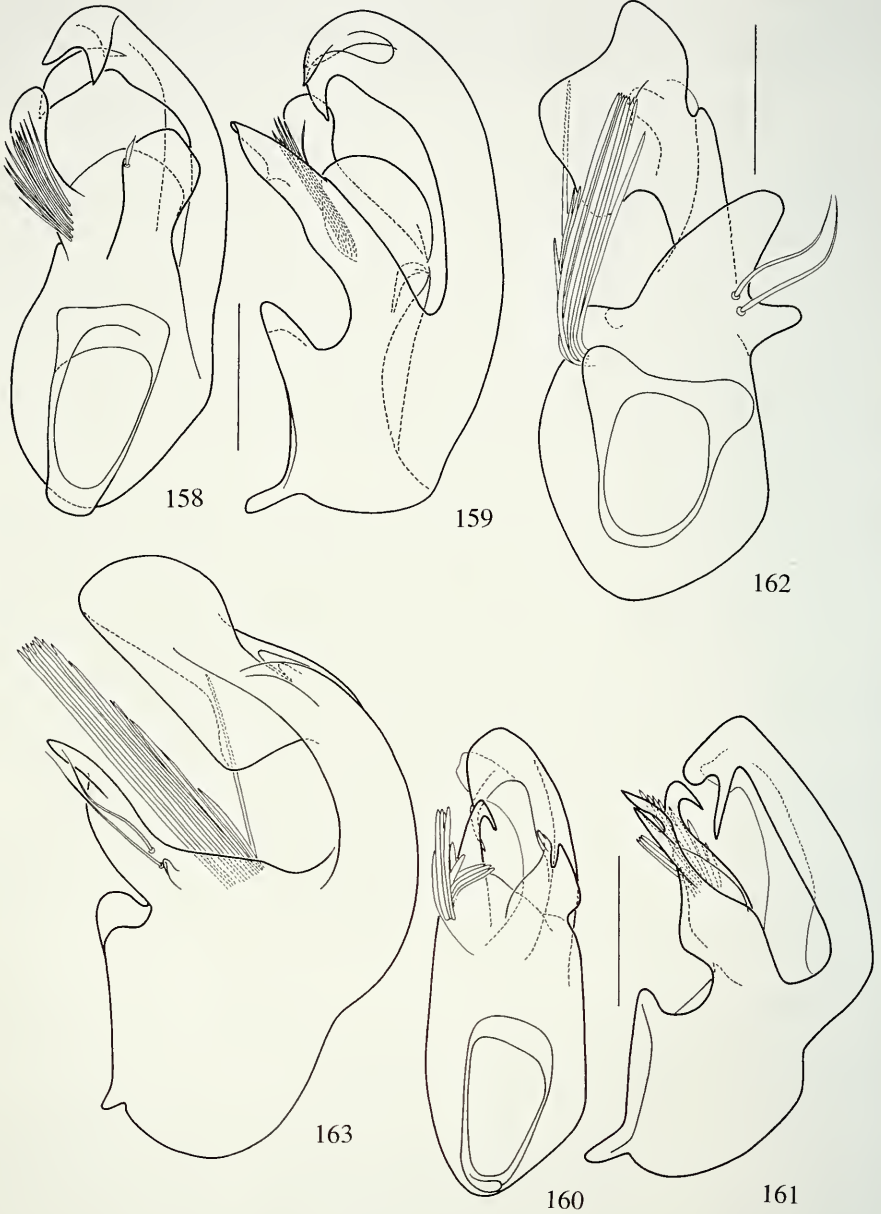
Batribolbus incurvus sp. n.

Figs 123, 141, 146, 164, 165

Holotype ♂: SRI LANKA: SABARAGAMUWA PROV.: Maratenna at 450 ft., 7 mls N Balangoda, 22.II.62, Expl # 98, sieved in debris (MZLU).

Paratype ♂: SRI LANKA: SABARAGAMUWA PROV.: same data as holotype (MHNG).

Description. Length 1.7 mm. Head with lateral contours concave; anterior arms of frontal sulci slightly extending on to interantennal impression and converging; vertexal carina extending to line of anterior margins of vertexal foveae; punctuation fine and dense on mesal and posterior sides of antennal tubercles, very fine and dense on frontoclypeus and vertex. Antennal segments 3 to 8 elongate; segments 3, 4, 6 and 8 subequal, each about 1.4 times as long as wide; segments 5 and 7 distinctly longer and slightly wider than adjoined segments, each about 1.6 times as long as wide; segments 9 and 10 distinctly elongate. Pronotum 0.40 mm long, 0.41 mm wide; median sulcus extending up to anterior fifth of disc; discal punctuation dense and very



FIGS 158 to 163: *Batribolbus* Raffray, aedeagi

158 and 159: *B. furcipes* sp. n., ventral (158) and lateral (159) views; 160 and 161: *B. gracilipes* sp. n., ventral (160) and lateral (161) views; 162 and 163: *B. hystrix* sp. n., ventral (162) and lateral (163) views. Scale bars = 0.1 mm.

fine. Humeral angles of elytra rounded. Elytral punctation fine, consisting of punctures larger than those on pronotum. Abdominal punctation very fine. Pubescence long, damaged; presence of additional, long setae unknown.

Male characters. Segment 4 of maxillary palpi moderately swollen, with basodorsal, foveiform impression (Fig. 123). Metasternum with medio-apical area flattened and smooth, and two large ridges bearing short pubescence on their tips and outer sides. Metasternal ridges almost touching metacoxae, becoming gradually lower anteriorly, abruptly ending posteriorly. Mesotrochanters swollen, lacking processes or denticles. Mesofemora swollen, with straight, basomesal spine (Fig. 141). Mesotibiae thick, sinuate, flattened on mesal side, with hook-like apical denticle (Fig. 146). Abdominal sternites 1 to 5, prolegs and mesolegs without obvious sexual characters. Aedeagus (Figs 164, 165) with long, right ventral process bearing two subapical setae and wide left ventral process apparently bearing row of long spiculae. Dorsal process narrow, with acute apex and acute subapical tooth.

Comments. This species may be distinguished by the pronotum conspicuously punctate between the mesal and lateral sulci, the elongate flagellar segments and the male sexual characters on the mesolegs.

Batribolbus mussardi sp. n.

Figs 113, 142, 147, 166, 167

Holotype ♂: SRI LANKA: UVA PROV.: Diyaluma Falls, ca 400m, below waterfalls, 23.I.70, ExpG # 21, leaf litter (MHNG).

Paratypes: SRI LANKA: NORTH PROV.: Garden Varuniya, 14.II.62, ExpL # 81, at light, 1 ♂ (ZMLU); NORTH CENTRAL PROV.: Sigiriya, 26.3.73, black light, M. Tronquet, 1 ♂ (MHNG); Anuradhapura, 150m, 23.I.65, R. Mussard, 1 ♂ (MHNG); Polonnaruwa, 12-14.I.65, R. Mussard, 12 ♂, 19 ♀ (MHNG, PCSK); Alut Oya, sandy river bank, 3.II.70, ExpG # 43a, 1 ♂, 2 ♀ (MHNG); Anuradhapura, 23.I.65, R. Mussard, 2 ♀ (MHNG); EASTERN PROV.: Maha Oya, sandy river banks, 11.II.70, ExpG # 60, 1 ♂ (MHNG); SOUTHERN PROV.: Tissamaharama, 21 and 22. I.64, R. Mussard, 4 ♂, 3 ♀ (MHNG, PCSK); UVA PROV.: Diyaluma Falls, ca 450, near falls, 25.I.70, ExpG # 26, sieved debris, 3 ♂ (MHNG); SABARAGAMUWA PROV.: Ratnapura Dist., Uggalkaltota 350 ft., Irrigation bulgalow, 31.I.-8.II.70, D. R. Davis & W. Rowe, 1 ♂ (NMNH).

Description. Length 1.50-1.60 mm. Head with lateral contours hardly concave; anterior arms of frontal sulci extending on to interantennal impression and parallel; vertexal carina extending anterior to line of vertexal foveae, ending in minute impression. Punctation dense and coarse on frontoclypeus and lateral parts of vertex, with punctures mostly larger than puncture intervals. Punctation sparse and very fine on middle part of vertex. Antennal segment 3, 5 and 7 each slightly longer than wide and slightly longer than segments 4, 6 and 8; segments 4 and 6 about as long as wide; segment 8 usually slightly wider, wider than long; segment 9 slightly wider than long, segment 10 distinctly wider than long. Pronotum 0.37-0.39 mm long, 0.38-0.40 mm wide; median sulcus reaching anterior sixth of disc. Humeral angles of elytra carinate. Punctation on pronotum dense and coarse, similar to that on frons, usually finer on lateral humps and close to median sulcus. Elytral punctation dense, slightly finer, abdominal punctation distinctly finer than that on pronotum. Pubescence moderately long, additional long setae absent.

Male characters. Segment 4 of maxillary palpi moderately swollen, lacking impressions, tubercles or apophyses (Fig. 113). Metasternum with narrow, smooth

median impression delimited laterally by two ridges slightly diverging posteriorly and bearing fairly long setae. Prolegs and metalegs without obvious sexual characters. Mesotrochanters with curved, slender, basomesal process and low mesal ridge (Fig. 142). Mesofemora swollen, curved, with outer side convexly rounded. Mesal side of mesofemora concave, with basal tubercle. Mesotibiae sinuate, flattened mesally, with long and oblique apical denticle (Fig. 147). Abdominal sternite 1 hardly flattened in middle; sternite 2 with minute, central denticle or tubercle; sternites 3 and 4 flattened in middle; sternite 5 very shallowly impressed in middle. Aedeagus (Figs 166, 167) with ventral process large, abruptly inclined apically. Bunch of short spiculae arising from small central lobe. Dorsal process large, curved.

Comments. This species has conspicuously modified male mesolegs and may be easily distinguished in male sex. The males of *B. mussardi* and *B. furcipes* differ strongly, but the females of these species may be distinguished only by subtle antennal characters.

***Batriolbus onustus* sp. n.**

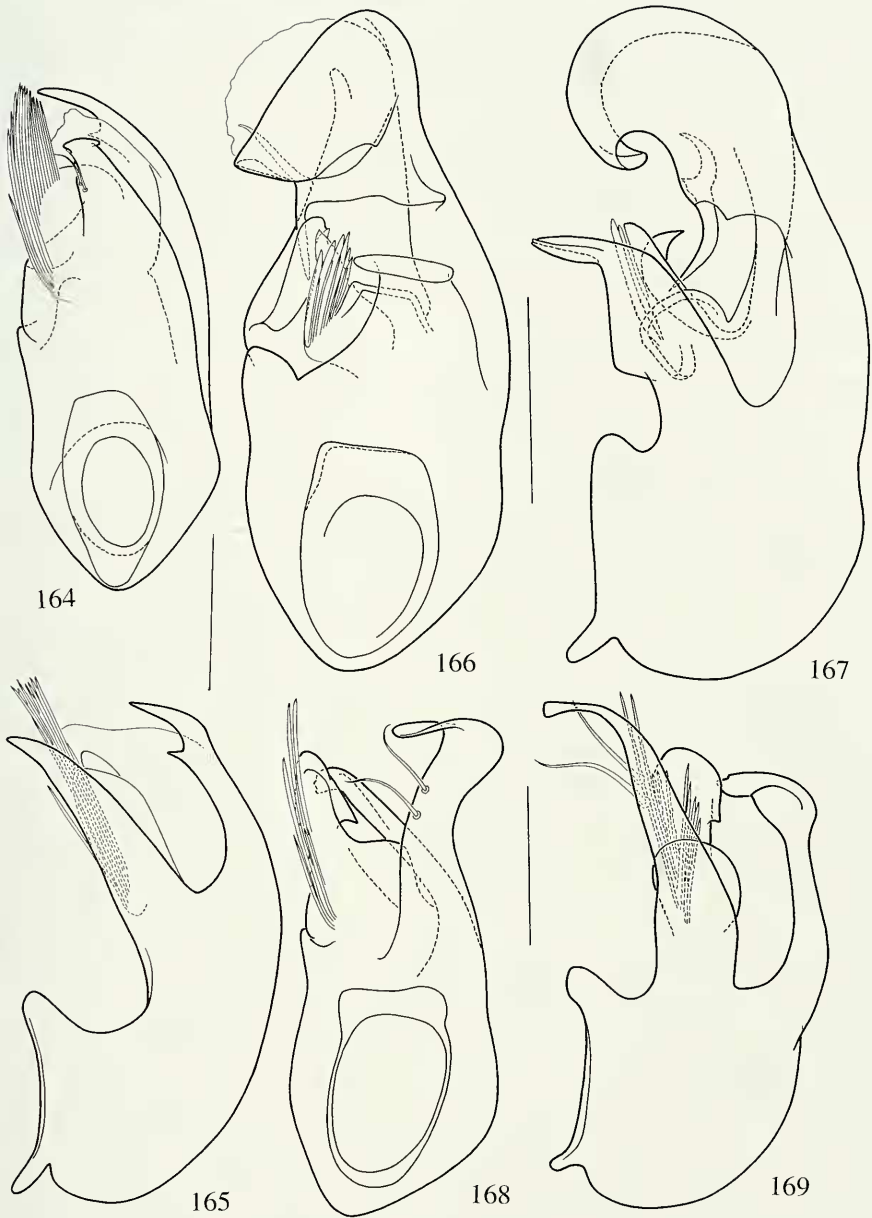
Figs 119, 127, 128, 143, 144, 168, 169

Holotype ♂: SRI LANKA: SOUTHERN PROV.: Galle Dist., Udugama, Kanneliya jungle, 400 ft., 6-12.X.73, at black light, K. V. Krombein, P. B. Karunaratne, P. Fernando, J. Ferdinando (NMNH).

Paratypes: SRI LANKA: SOUTHERN PROV.: same data as holotype, 7 ♂ (NMNH; MHNG); same data but 16.V.74, Gans & Prasanna, 4 ♂ (NMNH, MHNG); same data but 13-16.VIII.72, K. V. Krombein & P. B. Karunaratne, 4 ♂ (NMNH); SABARAGAMUWA PROV.: Ratnapura Dist., Gilimale Lumber Mill, 115 ft. black light, 20-25.X.76, G. F. Hevel, R. E. Dietz, S. Karunaratne & D. W. Balasooruiya, 4 ♂ (NMNH, MHNG).

Description. Length 1.65-1.75 mm. Head with lateral contours parallel; anterior arms of frontal sulci extending on to interantennal impression and parallel; vertexal carina extending slightly anterior to line of vertexal foveae, slightly thickened at end. Punctuation coarse and dense on frontoclypeus and lateral parts of vertex, fine and less dense on central part of vertex. Antennal segments 3 to 8 each distinctly elongate; segments 3, 4 and 6 subequal, segments 5 and 7 equally large, each hardly wider and about 1.2 times longer than segment 6; segments 9 and 10 distinctly elongate. Pronotum 0.40 mm long, 0.42 mm wide; median sulcus extending on to anterior eighth of discus. Humeral angles of elytra carinate. Pronotal punctuation coarse and dense on anterior inclined portion of disc and on anterior parts of areas between sulci; punctuation distinctly finer on lateral humps and most of surfaces between sulci. Elytral and abdominal punctuation fine. Pubescence fairly long, additional long setae on pronotum, elytra and abdomen present.

Male characters. Segment 4 of maxillary palpi swollen, flattened and with well delimited oval impression on dorsal side, abruptly conic apically (Figs 119, 127, 128). Metasternum smooth and conspicuously glabrous posteriorly, medio-apical smooth surface extending from apical margin up to metasternal mid-length, slightly impressed mesally. Metasternum with two large, subtriangular, vertical processes almost touching metacoxae. Each metasternal process with one long seta at anterior margin and short pubescent on tip. Pubescence of anterior portion of metasternum dense and short. Prolegs and metalegs without obvious sexual characters. Mesotrochanters with long, slender, curved process raising from mesal margin, posterior to middle



FIGS 164 to 169: *Batribolbus* Raffray, aedeagi

164 and 165: *B. incurvus* sp. n., ventral (164) and lateral (165) views; 166 and 167: *B. mussardi* sp. n., ventral (166) and lateral (167) views; 168 and 169: *B. onustus* sp. n., ventral (168) and lateral (169) views. Scale bars = 0.1 mm.

(Fig. 143). Mesofemora with basal angle slightly prominent. Mesotibiae flattened, hardly curved, widest in middle, gradually narrowed toward apex, with small, mesal, spine-like denticle arising posterior tibial mid-length, and with large, oblique, apical, spine-like denticle (Fig 144). Abdominal sternites 1 to 4 without obvious sexual characters. Sternite 5 shallowly impressed. Aedeagus (Figs 168, 169) with two ventral processes. Right process sinuate, expanded apically, bearing two subapical setae; left process bearing long spiculae, rounded apically. Dorsal process of median lobe narrow, moderately expanded at apex.

Comments. This species may be easily distinguished from its congeners by the segment 4 of maxillary palpi which is conspicuously flattened and conical apically.

***Batribolbus palpator* (Raffray)**

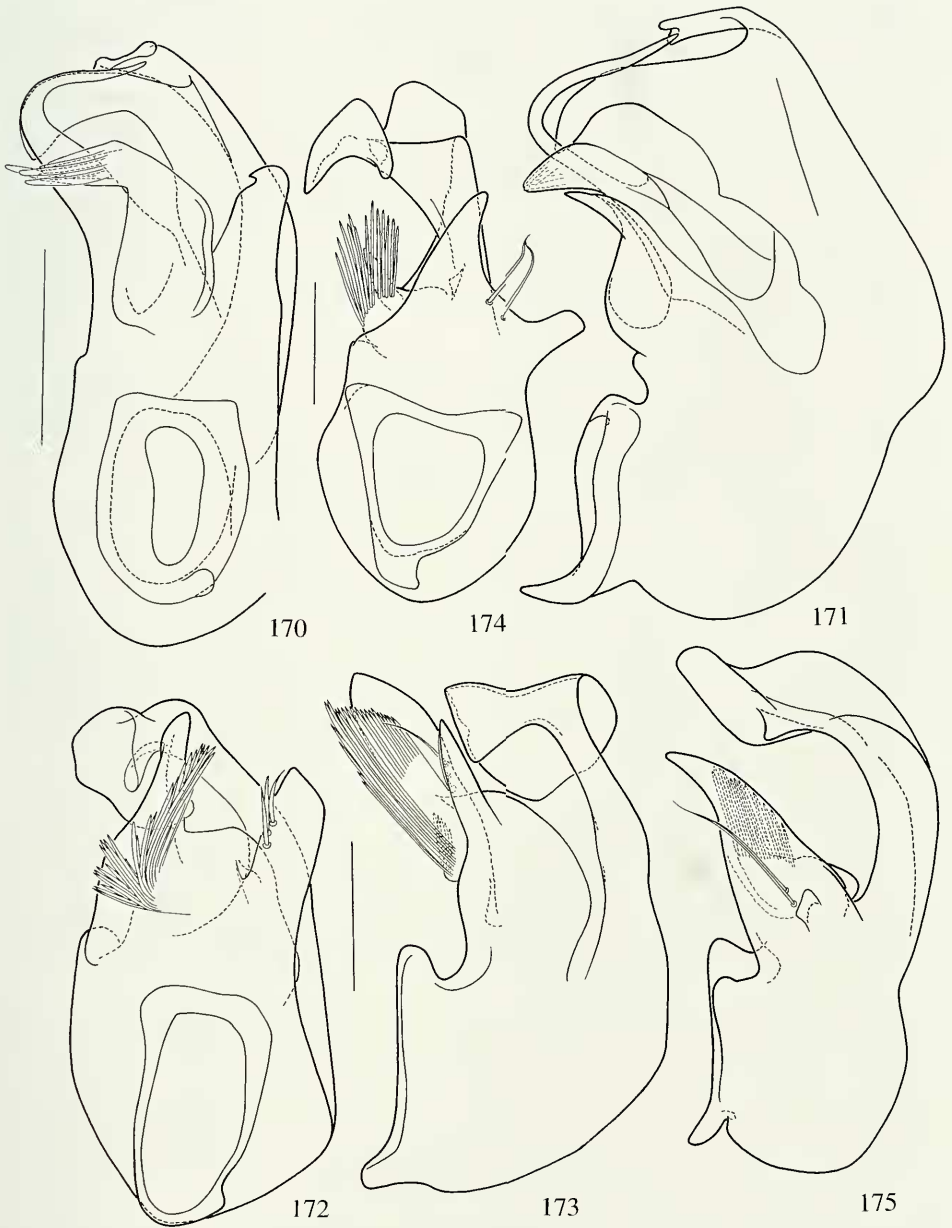
Figs 121, 129 to 131, 170, 171, 177

Eubatrisis palpator Raffray, 1894a: 451.

Batribolbus palpator; Raffray, 1904: 60, 102; Jeannel, 1961: 435.

Type material. Syntypes 1 ♂ and 1 ♀ from SRI LANKA, SOUTHERN PROV: Wakwele [=Wakwella], E. Simon (NMNH).

Material examined: SRI LANKA: SOUTHERN PROV.: Galle Dist., Udugama, Kanneliya Jungle, 400ft, 6-12.X.73, at black light, K. V. Krombein, P. B. Karunaratne, J. Fernando, 35 ♂ (NMNH, MHNG); Kanneliya Jungle, 13-16. VIII.72, K. V. Krombein & P. B. Karunaratne, 59 ♂ (NMNH, NMCC, MHNG, PCSK); Galle Dist., 11 mls E Udugama, Kanneliya Jungle, 11.X.73, at black light, K. V. Krombein, P. B. Karunaratne, J. Fernando, 1 ♂ (NMNH); Galle Dist., Kanneliya Jungle, 300 ft, 28.VII.73, black light, G. Ekis, 2 ♂ (NMNH); Galle Dist., Kanneliya Jungle, Hiniduma, 500 ft, 11-12.III.72, K. V. Krombein, 2 ♂ (NMNH); Western Prov., Yakkala, 18 mls NE Colombo, 14-31.I.62, al light, ExpL # 10, 4 ♂ (MZLU); Colombo Dist., Malawana, sea level, 22.VIII. 1973, at black light, G. Ekis, 1 ♂ (NMNH); Colombo Dist., Beyagama, sea level, 20-21.VIII. 73, G. Ekis, at black light, 9 ♂ (NMNH, MHNG); Colombo Dist., Hanwella Resthouse, 200 ft., black light, 2.X.76, G. F. Hevel, R. E. Dietz, V. S. Karunaratne & D. W. Balasooriya, 5 ♂ (NMNH); Amp. Dist., Inginiyagala, blacklight trap, 6-7.IX.75, D. M. Davies, S. Karunaratne & D. W. Balasooriya, 1 ♂ (NMNH); same but 7-8.IX., 1 ♂ (NMNH); CENTRAL PROV.: Kandy Dist., Peradeniya, Botanical Garden, 3.V.74, black light, Gans & Prasanna, 3 ♂ (NMNH); same but 28.III.71, P. & P. Spangler, 9 ♂ (NMNH); Kandy, 1800 ft., Peak View Motel, 15-24.I.70, D. R. Davis & W. Rowe, 2 ♂ (NMNH); Kandy (Roseneath), 25.III.71, P. & P. Spangler, 1 ♂ (NMNH); Kandy Dist., 5 mls NW Mahiyangana, 30. III.- 9.IV.71, P. & P. Spangler, black light Hasalaka irritation, 1 ♂ (NMNH); Kandy, Mahaweli Ganga, moist sandy banks, ca 450m, 1.II.70, ExpG # 38a, 34 ♂, 68 ♀ (MHNG, PCSK); Bad. Dist., 5 mls E Mahiyangana, Hasalaka, 200 ft, 16.XI.74, C. Gans & P. Fernando, 3 ♂ (NMNH); same but 15.VIII.73, G. Ekis, 11 ♂ (NMNH, MHNG); Mahaweli Ganga, 7 mls below Kandy, ca 450m, 30. I. 70, moist sandy banks of the river, ExpG # 44, 39 ♂, 91 ♀ (MHNG, PCSK); same but 10. II., veget. debris on river bank, ExpG # 57b, 8 ♂, 37 ♀ (MHNG, PCSK); affluent of Mahaweli Ganga, 10 mls below Kandy, ca 450m, 30.I.70, sandy river banks, ExpG # 35, 2 ♀ (MHNG); Matale Dist., Bandarapola, 13.V.74, Gans & Prasanna, 4 ♂ (NMNH); 2 mls S Dambulla, 7.II.70, moist sandy banks of a stream, ExpG # 54, 1 ♂ (MHNG); Ginigathena, ca 650 m, 9.II.70, sandy banks of Mahaweli Ganga, ExpG # 56, 9 ♂, 42 ♀ (MHNG); Pidurutalagala 2 mls NW Nuwara-Eliya, 4.III.62, jungle, under logs, ExpL # 116:1, 1 ♂ (MZLU); Uva Prov., Monaragala, blacklight trap, 5-6.IX.75, D. M. Davies, S. Karunaratne & D. W. Balasooriya, 8 ♂ (NMNH, MHNG); SABARAGAMUWA PROV.: Ambepussa, 5.XII.72, ExpG # 62, 9 ♂, 20 ♀ (MHNG); between Ambepussa and Polganawela, 16. I. 70, ExpG # 4, 1 ♂ (MHNG); Allerton, 1 mi SW Rakwana, 28.II.62, ExpL # 105, 1 ♂ (MZLU); same but Rakwana, 27. II. ExpL # 100, 1 ♂ (MZLU); Ratnapura Dist., Ratnapura, Resthouse, 200-300 ft., 24.X.76, black light, G. F. Hevel, R. E. Dietz, V. S. Karunaratne & D. W. Balasooriya, 4 ♂ (NMNH); Ratnapura, 22.II.62, at light, ExpL # 95, 13 ♂ (MZLU, MHNG); Ratnapura Dist., Gilimale Lumber Mill, 115 ft., black light, 20-25.X.76, G. F. Hevel, R. E. Dietz, V. S.



FIGS 170 TO 175: *Batribolbus* Raffray, aedeagi

170 and 171: *B. palpator* (Raffray), ventral (170) and lateral (171) views; 172 and 173: *B. pertubator* sp. n., ventral (172) and lateral (173) views; 174 and 175: *B. pubescens* (Raffray), ventral (174) and lateral (175) views. Scale bars = 0.1 mm.

Karunaratne & D. W. Balasooriya, 6 ♂ (NMNH, MHNG); same but 7.VIII.73, G. Ekis, 16 ♂ (NMNH, MHNG); Deerwood, Kuruwita, 6 mls NNW Ratnapura, 17-22.II.62, at light, ExpL # 90:1, 2 ♂ (MZLU); Ratnapura Dist., Nivitagala, Kiribatagala Estate, 4.VIII.73, 300 ft., G. Ekis, 1 ♂ (MHNG); Ratnapura Dist., Uggalkaltota, 350 ft., Irrigation bulgalow, 31.I-8.II.70, D. R. Davis & W. Rowe, 4 ♂ (NMNH, MHNG); Uva Prov., Westminster Abbey 25 mls ESE Bibile, 7.III.62, ExpL # 119:III sieved in debris, 1 ♂ (MZLU); UVA PROV.: Inginiyagala, 12.II.70, along a canal, ExpG # 63d, 1 ♂ (MHNG); EASTERN PROV.: Kantalai, 2. II.70, forest near Resthouse, 2.II.70, ExpG # 40b, 1 ♂ (MHNG); Maha Oya, sandy banks of a river, 11.II.70, ExpG # 60, 1 ♂, 4 ♀ (MHNG); NORTH CENTRAL PROV.: Ambagaswewa, 3. II.70, ExpG # 44, 1 ♂, 1 ♀ (MHNG); Alut Oya, sandy banks of a river, 3.II.70, ExpG # 43a, 3 ♀ (MHNG); NORTH WESTERN PROV.: Rajakadalawa, coconut plantation, sea level, 31.I.70, under bark and in rotten wood, ExpG # 36b, 1 ♂ (MHNG); Bibila, 4.V.74, at black light, Gans & Prasanna, 1 ♂ (NMNH); Kitulgala, 14. VII.79, G. de Rougemont, 4 ♀ (MHNG); SRI LANKA: Ceylon, Coll. Cl. Müller, 4 ♂ (ZSMC).

Description. Length 1.45-1.60 mm. Head with lateral contours very weakly converging anteriorly; anterior arms of frontal sulci converging, not extending on to interantennal impression; vertexal carina extending about to line of anterior margins of vertexal foveae, its anterior end not in impression. Punctuation dense and coarse on and posterior antennal tubercles, very fine and sparse on frontoclypeus and on most of vertex. Antennal segments 3 and 5 elongate; segments 4 and 6 each as wide as and shorter than segments 3 or 5, about as long as wide; segment 7 elongate, slightly wider than preceding flagellar segments; segment 8 as long as wide, about as wide as segment 7; segment 9 slightly longer than wide; segment 10 about as long as wide. Pronotum 0.34-0.35 mm long and wide; median sulcus short, usually not reaching anterior fourth of pronotum. Pronotal, elytral and abdominal punctuation very fine and sparse, anterior part of pronotum sometimes more coarsely punctate. Humeral angles of elytra carinate. Pubescence on dorsal side of body short, particular long setae absent.

Male characters. Maxillary palpi flattened and granulate dorsally, with bifid, basodorsal process raising dorsally (Figs 121, 129 to 131). Metasternum with median impression moderately deep, not clearly delimited, very finely punctate and pubescent; mesosternal ridges and processes absent. Prolegs and metalegs without obvious sexual characters. Mesotrochanters with small, pointed tooth in middle of mesal side. Metafemora flattened on posterior side, with antebasal patch of brick-wall like microsculpture (Fig. 177). Mesotibiae with straight mesal side, slightly rounded outer side, widest in middle, small, acute apical denticle. Abdominal sternite 1 evenly rounded. Sternites 2 to 4 flattened in middle. Sternite 5 very weakly impressed in middle. Aedeagus (Figs 170, 171) with ventral processes lacking setae. Right process large, notched subapically. Left process very long and narrow, strongly arcuate, partly overlapped by distinct, comparatively well sclerotized lobe bearing spiculae. Dorsal process with large, bifid apex.

Comments. *Batribolbus palpator* is characterized and may be easily distinguished by the male maxillary palpi bearing a dorsobasal process. The species was found in a variety of habitats, including debris in forests from sea level up to mountains, rotten coconut palm, and banks of streams. Most specimens in both sexes were found on moist sandy banks with sparse vegetation of Mahaweli Ganga.

***Batribolbus pertubator* sp. n.**

Figs 124, 138, 139, 172, 173

Holotype ♂: SRI LANKA: SABARAGAMUWA PROV.: Rakwana, 27-28.II.62, light trap, ExpL # 100 (MZLU).

Description. Length 1.75 mm. Head with lateral contours very weakly concave; anterior arms of frontal sulci extending on interantennal impression, parallel; vertexal carina long, ending distinctly anterior to line of anterior margins of vertexal foveae, its anterior portion not in impression. Punctuation sparse and very fine on most of frontoclypeus and vertex, fairly dense and coarse on and around antennal tubercles. Antennal segment 3 and 4 subequal, slightly longer than wide; segments 5 and 7 elongate, each about 1.5 times as long as wide, slightly wider than segments 3 and 4; segments 6 and 8 shorter than segment 5, each about 1.2 times as long as wide; segments 9 and 10 each distinctly longer than wide. Pronotum 0.39 mm long, 0.40 mm wide; median sulcus extending on to anterior eighth of disc. Punctuation on pronotum fairly sparse, distinctly coarser than that on vertex, that on elytra and abdominal terga very fine. Humeral angles of elytra carinate. Pubescence fairly long, additional long setae present on pronotum (elytral and abdominal pubescence strongly damaged).

Male characters. Segment 4 of maxillary palpi hardly swollen, with dorsobasal carina (Fig. 124). Metasternum with deep median impression, delimited lateroposteriorly by strongly raised, arcuate, sharp ridge; pubescence absent from most of median area, dense, short and recumbent near mesocoxal process, dense, fairly long and recumbent on inner side of each ridge. Abdominal sternites 1 to 4 impressed in middle. Abdominal sternite 1 with microsculptured, apicomeral patch. Impression on sternite 5 deeper than those on other sternites. Prolegs and metalegs without obvious sexual characters. Mesotrochanters with basal process slender, curved, similar to that in *B. pubescens*, mesal margin angulate subapically (Fig. 138). Metafemora swollen, with strongly convex anterior side, slightly concave posterior side. Mesotibiae widest posterior mid-length, strongly narrowed apically, with hook-shaped apical denticle (Fig. 139). Aedeagus (Figs 172, 173) with right ventral lobe oblique, fairly wide, bearing three subapical setae; left lobe gradually narrowed and partly overlapped by bunch of spicular. Dorsal lobe narrow in middle, abruptly, strongly widened in apical part.

Comments. This species is similar to *B. gracilipes* from which it may be easily distinguished by the male mesotibiae bearing an apical hook-like process.

***Batribolbus pubescens* (Raffray)**

Figs 114, 174 - 176

Eubatriscus pubescens Raffray, 1894a: 451.

Batribolbus pubescens; Raffray, 1904: 60, 102; Jeannel, 1961: 435.

Type material. Syntypes, 3 ♂, 3 ♀ from SRI LANKA: CENTRAL PROV.: Kandy, E. Simon (MNHN).

Additional material. SRI LANKA: CENTRAL PROV.: above Talatuoya, 850-1000m, 27.I.70, forest remnants, ExpG # 27a, 7 ♂, 3 ♀ (MHNG); same data but on soil along a small stream, ExpG 27b, 2 ♂, 6 ♀ (MHNG, PCSK); Kandy, ca 450m, sandy banks of Mahaweli Ganga, 1.II.70, ExpG # 38a, 1 ♂ (MHNG); Kandy, hill forests south lake, rotten log, 14.II.70, ExpG # 67a, 2 ♂, 5 ♀ (MHNG); Kandy, 26.I.64, R. Mussard, 2 ♂, 1 ♀ (MHNG); Kandy, 1-

15.III.71, Piyadasa & Somapala, 1 ♂ (MHNG); Kandy Dist., Peradeniya, Botanical Garden, 28.III.1971, blacklight, P. & P. Spangler, 7 ♂ (NMNH, MHNG, PCSK); same data but 3.V.74, Gans & Prasanna, 1 ♂ (MHNG); Hatton, 27.VIII.1959, P. Rémy, 1 ♂, 3 ♀ (MNHN); Ramboda, 7 mls NW Nuwara Eliya, 4.III.62, ravine with stream, under stones, ExpL # 118, 3 ♀ (MZLU, MHNG); SABARAGAMUWA PROV.: Deerwood, Kuruwita, 6 mls NNW Ratnapura, 17-22.II.62, at light, ExpL 90:I, 1 ♂ (MZLU); Bopathella Falls, 9 mls NNW Ratnapura, 19.II.62, ExpL # 91:I, sieved in debris, 1 ♂ (MZLU); Ratnapura, at light, 22.II.62, ExpL # 95, 2 ♂ (MZLU, MHNG).

Description. Length 1.75-2.0 mm. Head with lateral contours hardly concave; anterior arms of frontal sulci slightly extending on to interantennal impression, short, almost parallel; vertexal carina extending up to or slightly anterior to line of anterior margins of vertexal foveae, ending in small impression. Punctuation dense and fairly coarse on and between antennal tubercles, very fine on inclined frontoclypeus and on vertex. Antennal segment 3 slightly longer than wide; segments 4 to 8 each about as long as wide; segment 4, 6 8 subequal, segments 5 and 7 slightly larger than adjoined segments; segment 9 about as long as wide, segment 10 slightly wider than long. Pronotum 0.38-0.40 mm long, 0.42-0.45 mm wide; median sulcus extending on to anterior sixth of disc; punctuation dense and comparatively coarse on central areas between median and lateral sulci, sparse and very fine on most of discal surface. Humeral angles of elytra carinate. Punctuation on elytra and abdominal tergites dense and fine. Pubescence long, dense semi-erect on head, pronotum, elytra and abdominal tergites, additional particular long setae absent.

Male characters. Segment 4 of maxillary palpi with oval, basodorsal impression and small tubercle raising from apical part of impression (Fig. 114). Metasternum flattened near mesocoxal process, with wide, fairly shallow median impression not clearly delimited laterally and two large, apical processes raising from near inner side of metacoxae. Metasternal processes orientated apicoventrally, gradually narrowed, slightly curved at tip. Median part of metasternum with dense and very fine punctuation and short, recumbent pubescence. Prolegs and metalegs without obvious sexual characters. Mesotrochanters each with mesal margin carinate and slightly angulate, basal angle with large, curved, spine-like process and subapical tubercle (Fig. 176). Mesotibiae gradually widened toward middle, moderately narrowed in apical half, with short, narrow, apical denticle (Fig. 176). Abdominal sternites 1 to 3 flattened in middle; sternite 4 impressed and with carinate apical margin in middle; sternite 5 very deeply impressed toward mid-line. Aedeagus (Figs 174, 175) with right ventral lobe expanded by oblique, ventral processes; two long setae arising from area between processes. Right process truncate at apex (in ventral view); left process gradually narrowed. Spiculae arising from small lamina. Dorsal lobe arcuate, with apical part expanded and separated in two parts.

Female characters. Tergite 5 with large, spine-like basomedian projection.

Comments. This species differs conspicuously from its congeners by the modified sternite 5 in female.

Batribolbus punctatus sp. n.

Figs 118, 145, 178 - 180

Holotype ♂: SRI LANKA: CENTRAL PROV.: Kandy, ca 700m, hills south lake, leaf litter, 14.II.70, ExpG # 67 (MHNG).

Paratypes: SRI LANKA: CENTRAL PROV.: same data as holotype, 33 ♂, 75 ♀ (MHNG, PCSK); Kandy, forest near Chalet Guesthouse, ca 600m, sieved litter, 15.I.70, ExpG # 3c, 36 ♂, 18 ♀ (MHNG); Kandy, 24.I.64, R. Mussard, 2 ♂, 2 ♀ (MHNG); same data but 19.I., 3 ♀ (MHNG); Kandy, 1800 ft., Peak View Motel, 7-14.I.70, D. R. Davis & W. Rowe, 2 ♂ (NMNH, MHNG); Madulkele, 27.I.64, R. Mussard, 2 ♂, 10 ♀ (MHNG); same data but 30.I., 7 ♂, 6 ♀ (MHNG); Madugoda, 30.I.64, R. Mussard, 1 ♂, 1 ♀ (MHNG); Matale Dist., Bandarapola, 13.V.74, Gans & Prasanna, 2 ♂ (NMNH); UVA PROV.: Ella, 16.III.73, M. Tronquet, sieved humus, 1 ♀ (MHNG).

Description. Length 1.35-1.50 mm. Head with lateral contours hardly concave or straight; anterior arms of frontal sulci extending on to interantennal impression and parallel; vertexal carina long, extending far anterior to line of vertexal foveae; punctation throughout coarse, very dense on and mesally antennal tubercles, sparser on middle part of vertex. Antennal segments 3, 4, 6 and 8 subequal, each about as long as wide or hardly longer than wide, segment 8 usually somewhat shorter than segment 6; segments 5 and 7 distinctly longer and slightly wider than adjoined segments, each about 1.3 times as long as wide; segment 9 slightly longer than wide; segment 10 about as long as wide. Pronotum 0.34 mm long, 0.37-0.38 mm wide; median sulcus extending on to anterior sixth of disc; punctation dense and coarse, except smooth narrow areas along sulci. Humeral angles of elytra carinate. Punctation on elytra and abdomen comparatively coarse and dense. Pubescence fairly long, additional long setae present on head, pronotum, elytra and abdomen.

Male characters. Segment 4 of maxillary palpi moderately swollen, lacking impressions, with short basodorsal fold and flat setae (Fig. 118). Median part of metasternum throughout smooth and shiny. Medio-apical portion of metasternum impressed and inclined toward apical margin; impression delimited latero-anteriorly by pair of small, flat protuberances bearing short setae. Mesotrochanters with bifid process raising from middle of mesal margin (Fig. 145). Mesofemora swollen, with subbasal patch of brickwall-like microsculpture. Mesotibiae almost straight, thickened toward middle, narrowed from middle to apex on mesal side, with distinct apical spine-like denticle (Fig. 178). Abdominal sternite 1 with shallow median impression; punctation very fine in impression, coarse posterior impression. Sternites 2 to 5 flat in middle. Prolegs and metalegs without obvious sexual characters. Aedeagus (Figs 179, 180) with large right ventral process, wide and very short lobe overlapping partly a narrow apophysis, bearing two subapical setae. Dorsal process oblique, with acute tip. Spiculae absent.

Comments. This species may be distinguished by the head and pronotum coarsely punctate, the dorsum of the body bearing long setae, the antennal segments 5 and 7 elongate, and the male mesotrochanters bearing a bifid process.

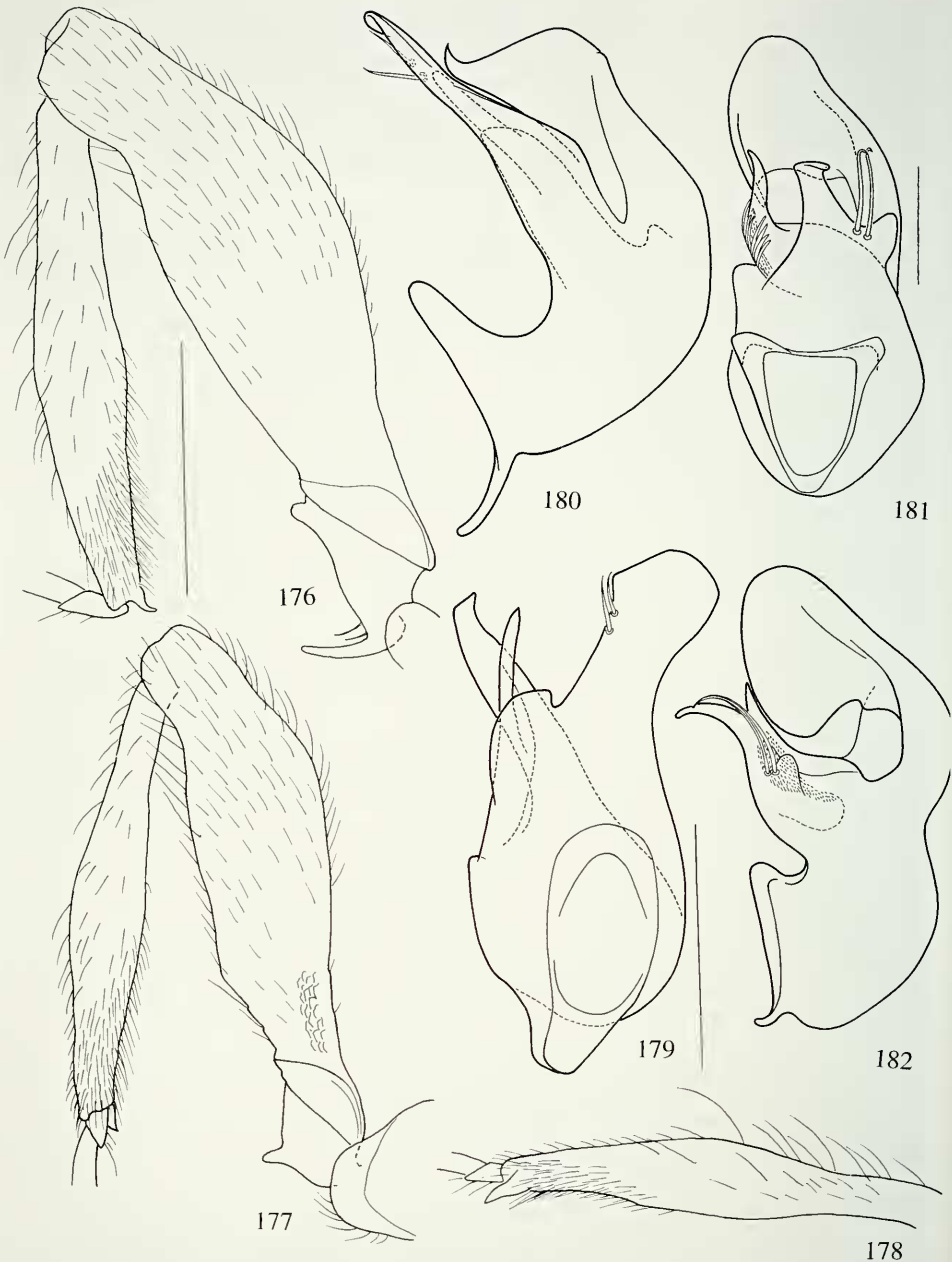
***Batribolbus trebax* sp. n.**

Figs 122, 181, 182

Holotype ♂: SRI LANKA: CENTRAL PROV.: Kandy, 700m, 19.I.65, R. Mussard (MHNG).

Paratypes: SRI LANKA: CENTRAL PROV.: same data as holotype, 1 ♂ (MHNG); Kandy, 1800 ft., Peak View Motel, 7-14.I.70, D. R. Davis & W. Rowe (NMNH).

Description. Length 1.7 mm. Head with lateral contours converging anteriorly; anterior arms of frontal sulci extending on to impression between antennal tubercles, parallel; vertexal carina reaching anterior level of vertexal foveae, with anterior



FIGS 176 to 182: *Batribolbus* Raffray

176: *B. pubescens* (Raffray), mesoleg; 177: *B. palpator* (Raffray), mesoleg; 178 to 180: *B. punctatus* sp. n., mesotibia (178), aedeagus in ventral (179) and lateral (180) views; 181 and 182: *B. trebax* sp. n., aedeagus in ventral (181) and lateral (182) views. scale bar = 0.2 mm. 176 to 178, scale bar = 0.2 mm; 179 to 182, scale bars = 0.1 mm.

portion slightly raised from minute impression. Punctuation sparse and very fine on frontoclypeus and large central and posterior parts of vertex, dense and coarse on lateral portions of vertex. Antennal segments 3 to 8 about as long as wide or slightly wider than long; segments 5 and 7 slightly larger than preceding segments; segments 9 and 10 distinctly wider than long. Pronotum 0.40 mm long, 0.42 mm wide; mesal sulcus extending up to anterior eighth of disc. Pronotal, elytral and tergal punctuation dense and equally very fine. Pubescence long; additional, very long setae apparently absent (pubescence damaged in all specimens).

Male characters. Segment 4 of maxillary palpi with elongate basomesal impression (Fig. 122). Humeral angle of elytra denticulate. Metasternum with deep median impression flattened in middle, pubescence in impression very short and recumbent; margins of impression raised posteriorly to form robust, short ridges. Prolegs and metalegs without obvious sexual characters. Mesotrochanters each with mesal edge bearing slender, curved, digitiform process and flat, triangular denticle; apical angle prominent. Mesotibiae slightly curved, gradually thickened toward middle, mesal side narrowed from middle to apical third, in apical third equally wide. Abdominal sternites 1 to 3 flattened in middle. Aedeagus (Figs 181, 182) with three ventral processes. Right ventral process expanded by short, oblique, rounded lateral lobe, middle process much longer, curved at apex; left ventral process narrow, sinuate, with acute tip. Pair of long setae arising from base of right process. Dorsal process arcuate, strongly expanded in apical part.

Comments. This species is similar to *B. carinatus*. It is characterized by the comparatively short flagellar segments, the throughout fine pronotal punctuation and the male protibiae gradually narrowed apically.

Batrisiella Raffray

Fig. 183

Batrisiella Raffray, 1904: 59; type species *Eubatrisus caviventris* Raffray, 1894.

Arthromelinus Jeannel, 1952: 98; type species *Batrisus angulatus* Raffray, 1892. Synonymized by Jeannel (1960b).

Description. Habitus as Fig. 183. Length 1.6-2.6 mm. Body with dorsal side convex. Head below plan of pronotum, elytra raised above plan of vertex and abdomen. Punctuation of body and appendages dense, mostly very fine. Pubescence variably long, particularly long setae present in some species.

Head subpentagonal, longer than wide including eyes, usually narrowed posteriorly and narrower than pronotum. Lateral contours slightly concavely arcuate or parallel-sided. Frontal lobe below plan of vertex, impressed between antennal tubercles and inclined toward arcuate anterior margin of frontoclypeus. Antennal fossae distant, frontoclypeus wide, obliquely inclined, distinct in dorsal view. Antennal tubercles distinct. Vertex with foveae not or in impressions, lacking semicircular sulcus, with median carina separated from frons by transverse, V-shaped or arcuate sulcus. Lateral frontal foveae inconspicuous, shallow and small, situated on antennal tubercles. Ocular-mandibular carina arcuate close eye margin. Occipital part of vertex transverse, convexly inclined toward neck. Eyes large, not notched, situated at posterior half of head, multifaceted, facets large. Tempora short, rounded. Ventral



FIG. 183
Batrisiella srilankana sp. n.

side of head fairly long, convex, moderately inclined toward neck, lacking long post-genal setae. Gular foveae close, in common impression.

Antennal length variable. Scape cylindrical in dorsal view, curved in lateral view, with ventral side arcuate, dorsoapical angles acute, slightly prominent, lacking modified setae and glandular orifice. Segments 2 to 8 symmetrical, subcylindrical or cylindrical. Pedicel longer than wide, smaller than scape. Segments 5 and 7 longer than adjoined segments. Club 3-segmented. Maxillary palpi fairly long, segment 3 short, longer than wide, slightly widened toward apex; segment 4 lacking stalk, with base narrow, swollen from base toward middle.

Pronotum convex, about as long as wide, widest in middle part, strongly narrowed basally and apically, with one mesal and two lateral sulci, antebasal transverse sulcus crossed by mesal sulcus and joined to lateral sulci, lateral sulci extended ventrally and surrounding completely lateral humps, four distinct basal foveae, one pair of lateral foveae at joints of antebasal and lateral sulci, lacking carinae and tubercles or denticles. Paranotal ridges replaced anteriorly by sulci bent obliquely dorsally. Hypomera smooth, with basolateral foveiform impressions.

Elytra convex, fairly long, longer than pronotum, combined much wider than long. Lateral contours broadly arcuate. Each elytron with basal ridge, two basal foveae, subhumeral fovea, entire sutural stria, long discal stria, lateral carina joined to subhumeral fovea and curved dorsally, extending posterior to humeral angle.

Metasternum swollen, not or weakly impressed in middle, with basomedian foveiform impression or median sulcus. Lateral metasternal foveae separated by tubercle larger or about as large as foveal diameter.

Legs slender, protarsi and mesotarsi with segments 2 and 3 similar in length, metatarsi usually with segment 2 distinctly longer than segment 3.

Abdomen with 4 tergites visible in dorsal view. Tergite 1 large, longer than tergites 2 to 4 combined, usually parallel-side and not inclined apically, not constricted basally, with single, short, lateral carina at each side, transverse basal ridge, two pairs of close basal foveae and pair of basodiscal carinae touching inner basal foveae. Tergites 2 to 4 strongly inclined, lacking foveae and impressions. Tergites 2 and 3 not separated from sternites by sutures or carinae. Tergite 4 separated by sutures from sternite, usually about as long as combined length of tergites 2 and 3, much shorter than tergite 1. Sternite 1 narrowed mesally, in middle moderately to much longer than sternite 2, with carinate basomesal process, two pairs of basal foveae, two basodiscal carinae each touching margin of basolateral fovea, and one pair of lateral sulci, each starting at impression at basolateral fovea. Following sternites lacking foveae.

Sexual characters. Secondary sexual characters located usually on tergite 1, mesotrochanters and mesotibiae, rarely on prolegs and metalegs, metasternum and eventually abdominal sternites 1 and 5. Eyes and elytra similar in both sex. Aedeagus with ventral stalk of basal bulb projecting proximally and articulated process inserted at dorsal side, usually at left margin, seldom at right margin (*B. caviventris*); setae absent.

Habitats. Sri Lankan species inhabit mainly litter and banks of streams, savannahs and dry forest ecosystems. *Batrasiella caviventris* occurs in high altitude wet forests. Many species are represented only by males found in light traps.

Distribution. Southeast Asia.

Comments. Jeannel (1952) erected a new subgenus of *Arthromelus* Jeannel, *Arthromelinus*, for *Batrisocenus angulatus* Raffray and for two new species from Vietnam. He (Jeannel, 1952) stated that the group is species-rich and comprises the species that Raffray (1904) had placed in his "*Batrisocenus* group XVIII". This group included originally also *A. optatus* (Sharp), *A. elongatus* (Raffray) and *A. abdominalis* Raffray that Jeannel (1958, 1959) placed later in *Arthromelodes* Jeannel and in *Arthromelus* Jeannel, respectively. Hence, the "*Batrisocenus* group XVIII" as defined by Raffray would be polyphyletic. Most of the 36 members of the "*Batrisocenus* group XVIII" are Oriental and were not studied by modern authors. Later Jeannel (1960b) synonymized *Arthromelinus* with *Batrisiella*, described five new species of *Batrisiella* from India and included the South Indian *Batrisocenus protervus* Raffray in *Batrisiella*. We consider difficult to follow Jeannel (1952) and to hold all those species that were not explicitly transferred from *Batrisocenus* to *Arthromelinus* or *Batrisiella* as members of *Batrisiella*.

KEY TO THE SPECIES OF *BATRISIELLA* OF SRI LANKA

- 1 Punctuation of pronotum and head conspicuously dense and coarse, much coarser than that on elytra. Vertexal carina short, not reaching occiput. Pubescence long. Antennae short. *B. aulica* sp. n.
- Punctuation of pronotum and usually also of head fine, not conspicuously coarse, similar to that of elytra. Vertexal carina long, reaching occiput 2
- 2 Antennae short, segment 7 about 1.4 to 1.5 times as long as wide 3
- Antennae long, segment 7 about 1.8 to 2 times as long as wide 7
- 3 Male with simple abdominal tergite 1 and strongly modified, widened metatibiae (Fig. 196) *B. puberula* Jeannel
- Male with abdominal tergite 1 excavated, metatibiae slender, unmodified . . . 4
- 4 Excavation of male abdominal tergite 1 slightly raised mesally, not clearly delimited laterally, with two foveiform impression at bottom (Fig. 193) *B. saucia* (Raffray)
- Excavation of male tergite 1 strongly raised medio-apically to form tubercle, well delimited laterally, without foveiform impressions at bottom . . 5
- 5 Male tergite 1 impressed between excavation and lateral margins *B. shinghalensis* (Raffray)
- Male tergite 1 convex or slightly flattened at each side of excavation, lacking lateral impressions 6
- 6 Abdominal tergite 1 with discal carinae separated by about half of tergal width. Male with two foveae and impressions anterior tergal excavation (Fig. 189) *B. favea* sp. n.
- Abdominal tergite 1 with discal carinae separated by less than one third of tergal width. Male lacking foveae and not impressed anterior tergal excavation (Fig. 195) *B. srilankana* sp. n.
- 7 Excavation of male abdominal tergite 1 about as wide as third of tergite, sharply delimited laterally 8

- Excavation of male abdominal tergite 1 wider than half of tergite, not sharply delimited laterally 9
- 8 Discal carinae of abdominal tergite 1 separated by almost half of tergal width. Male abdominal sternite 1 with median ridge. Mesal side of male mesotrochanters expanded and bearing setal tuft. Anterior wall of tergal excavation with central tubercle *B. caviventris* (Raffray)
- Discal carinae of abdominal tergite 1 separated by fifth of tergal width. Abdominal sternite 1 not modified sexually. Mesal side of male metatrochanters with apical denticle. Anterior wall of tergal excavation without tubercle *B. lewisi* Jeannel
- 9 Male abdominal sternite 1 not modified. Smaller species, 1.7 to 1.9 mm long 10
- Male abdominal sternite 1 with robust transverse ridge raised horn-like laterally. Larger species, 2.15 to 2.25 mm long 11
- 10 Bottom of excavation of male abdominal tergite 1 with low median tubercle and two carinae converging anteriorly (Fig. 191) . *B. illecebrosa* sp. n.
- Bottom of excavation of abdominal tergite 1 moderately raised in middle and with two foveiform impressions (Fig. 187) *B. dryas* sp. n.
- 11 Male with apical tooth of mesotibiae very long, its length about as twice of tibial width. Bottom of excavation of tergite 1 without transverse carina anterior semicircular carina *B. remyi* Jeannel
- Male with apical tooth of mesotibiae about as long as tibial width. Bottom of excavation of tergite 1 with transverse carina anterior semicircular carina *B. retusa* sp. n.

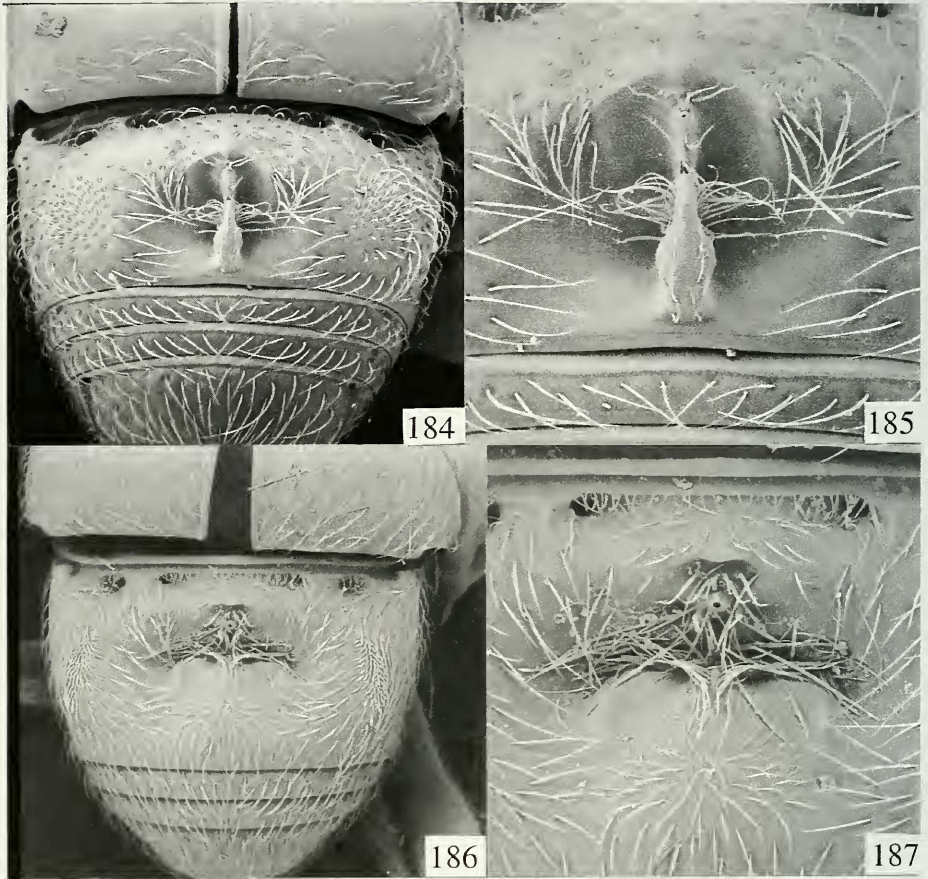
***Batrasiella aulica* sp. n.**

Figs 184, 185, 198

Batrasiella caviventris; Jeannel, 1961: 437.

Holotype ♂: SRI LANKA: NORTH CENTRAL PROV.: Anuradhapura, 150m, 23.I.65, R. Mussard (MHNG).

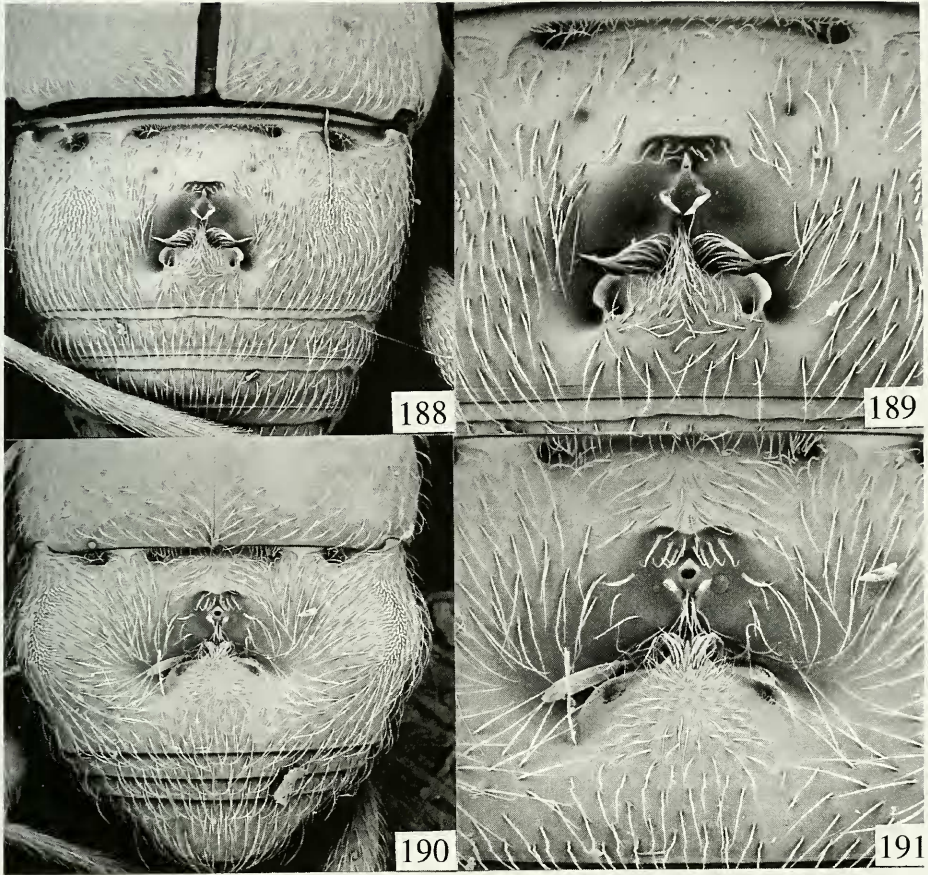
Paratypes: SRI LANKA: NORTHERN PROV., forest 4-5 mls NE Mullaitivu, 6.II.70, ExpG # 50b, 6 ♂, 5 ♀ (MHNG); 2 mls NE Puliyan Kulam, 6.II.70, ExpG 48b, 2 ♂, 4 ♀ (MHNG); Murunkan, 5.II.70, savanna, ExpG # 46, 2 ♂ (MHNG); Madhu Road, forest, 5.II.70, ExpG # 47, 3 ♂, 8 ♀ (MHNG); Nedunleni, 6.II.70, ExpG # 49, 1 ♀ (MHNG); Giant's Tank 10 mls SE Mannar, pond, grassy ground, 15.II.62, ExpL # 83, 1 ♂ (MZLU); NORTH CENTRAL PROV.: Anuradhapura, 150m, 23.I.65, R. Mussard, 17 ♂, 33 ♀ (MHNG); Polonnaruwa, 12. and 14.I.65, R. Mussard, 1 ♂, 3 ♀ (MHNG); Mihintale, 7.II.70, ExpG # 52, 6 ♀ (MHNG); Put. Dist., Wilpattu Park, 100ft, Talawila, 9-10.IV.73, black light, Bauman & Cross, 1 ♂ (NMNH); Wilpattu N.P. Maradan Maduwa, 23 mls Wanuradhapura, 2.II.62, at light, ExpL # 48, 1 ♂ (MZLU); Anu. Dist., Hunuwilagama, near Wilpattu, 200ft, black light, 28.X.-3.XI.76, 2 ♂. G. F. Hevel, R. E. Dietz, S. Karunaratne, D. W. Balasooriya, 2 ♂ (NMNH); Anu. Dist., Wildlife Soc. Bungalow, Hunuwilagama, Wilpattu, 10-19.III.70, D. R. Davis & W. Rowe, 378 ♂ (NMNH, NMCC, MHNG, PCSK); Anu. Dist., Padaviya, 180ft, 2-8.XI.70, O. S. Flint Jr., 1 ♂ (NMNH); Anu. Dist., Irrigation Bungalow Padaviya, 180 ft., 27.II.-9.III.70, D. R. Davis & W. Rowe, 1 ♂ (NMNH); forest 2 mls N Medawachchiya, 6.II.70, ExpG # 51b, 14 ♂, 22 ♀ (MHNG, PCSK); Sigiriya, 26.III.73, light trap, M. Tronquet, 15 ♂ (MHNG); CENTRAL PROV.: Dambulla, 200m, 9.I.65, 3 ♀, R. Mussard (MHNG); same but 12.I.65, 1 ♀ (MHNG); Kan. Dist., 5 mls NW Mahiyangana, 30.III.-9.IV.71, P. & P. Spangler, 2 ♂ (NMNH); EASTERN PROV.: Kantalai, 2.II.70, ExpG # 40, 1 ♀ (MHNG); UVA PROV.: Inginiyagala, 12.II.70, ExpG #



FIGS 184 to 187: *Batrisiella* Raffray, male abdominal excavation
184 and 185: *B. aulica* sp. n.; 186 and 187: *B. dryas* sp. n.;

63, 1 ♀ (MHNG); SABARAGAMUWA PROV.: Rat. Dist., Uggalkaltota, 350ft, Irrigation Bungalow, 31.I.-8.II.70. D. R. Davis & W. Rowe, 2 ♂ (NMNH); WESTERN PROV.: Yakkala, 18 mls NE Colombo, 14-31.I.62, at light, ExpL # 10, 1 ♂ (MZLU); SOUTHERN PROV.: Tissamaharama, 22.I.64, M. Mussard, 1 ♂, 6 ♀ (MHNG); Tissamaharama, Resthouse, 23.I.70, light trap, ExpG # 22, 9 ♂ (MHNG); Galle, 22.I.64, R. Mussard, 1 ♂, (MHNG); Palatupana near entrance of Yala Nat. Park, dry savanna, 24.I.70, ExpG # 23, 7 ♂, 10 ♀ (MHNG); Lunuganwehera, cultivated land, 24.I.70, ExpG # 24, 3 ♂, 2 ♀ (MHNG).

Description. Length 1.80-2.05 mm. Punctuation coarse and dense on head, most of pronotum and femora, very fine on elytra and abdomen. Coarse punctures mostly larger than puncture intervals. Pubescence on body and tibiae long, erect or semi-erect. Head with few particularly long setae. Head with median vertexal carina low, extending from frontal sulcus to plan of vertexal foveae. Vertexal foveae in impressions. Frontal sulcus moderately arcuate. Antennae short; pedicel about as long as



FIGS 188 to 191: *Batrisiella* Raffray, male abdominal excavation
 188 and 189: *B. favea* sp.n.; 190 and 191: *B. illicebrosa* sp. n.;

segment 3 and half of segment 4 combined; segments 4, 6 and 8 each slightly longer than wide; segment 7 about 1.3 to 1.4 times as long as wide. Pronotum with median sulcus deep and short, narrowed anteriorly, ending between mid-length and anterior third of pronotal disc. Elytra with discal stria deep anteriorly, becoming shallow apically, extending about up to apical fourth. Discal carinae of abdominal tergite 1 usually covered by elytra, about as long as one fifth to one sixth of tergal length, separated by about half of tergal width.

Male characters. Metasternum not impressed in medio-anterior part, with foveiform medio-apical impression small, deep, and elongate. Metasternal pubescence sparse. Mesotrochanters with mesal impression bearing short setal tuft, partly overlapped from below by crest. Abdominal tergite 1 (Figs 184, 185) with excavated sexual patch longer than wide, about as wide as sixth of tergal width and longer than

half of maximal tergal length; well delimited in anterior half by sharp margin and separated by low median carina; apical half of impression not clearly delimited laterally, with median carina strongly raised to form flat keel. Flat, oblique area with patch of conspicuously dense punctation and short, modified setae at each side, between excavation and lateral margins of tergite. Abdominal sternites 1 and 5 lacking obvious sexual characters. Aedeagus (Fig. 198) with dorsal process of median lobe elongate, weakly sclerotized, with shallow apical notch at left side and prominent right side of apical part. Articulated process inserted at left side of basal bulb, slender, strongly curved in basal and subapical portions, consisting of two or three rods in subapical portion, narrow and pointed basally in apical portion.

Comments. See under *B. caviventris*.

***Batrisiella caviventris* (Raffray)**

Figs 199, 200

Eubatrismus caviventris Raffray, 1894a: 452.

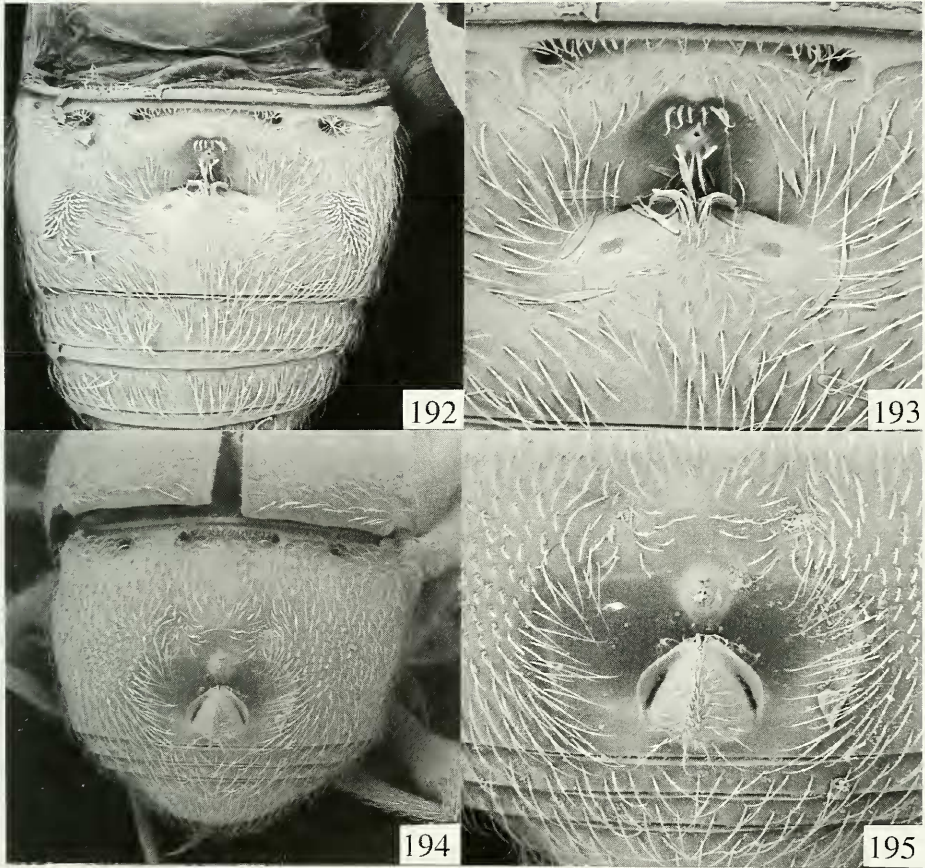
Batrisiella caviventris; Raffray, 1904: 102.

Type material. Syntypes: 3♂, 3♀ from SRI LANKA: CENTRAL PROV.: Nuwara-Eliya, E. Simon (MNHN). One male bears the original hand-written labels "Simon Nuwara Elia"/ 1403 /*Batrisiella caviventris* ♂ ♀ Typ. Rffray Ceylan", the remaining five specimens are from the same Raffray's original slide and bear the locality and identification labels written subsequently by the senior author.

Additional material. SRI LANKA: CENTRAL PROV.: Hakgala, 1700m, north-eastern slope, forest litter, 28.I.70, ExpG # 70, 2♂, 3♀ (MHNG); Hakgala, 5 mls SE Nuwara Eliya, 3.III.62, forest debris, ExpL # 114:I, 3♂, 1♀ (MZLU); Horton Plains, 2100m, forest litter, 14.II.70, ExpG # 68, 4♂, 6♀ (MHNG, PCSK); Horton Plains, 7000 ft, 11 mls SSE Nuwara Eliya, 19-20.III.62, indigenous forest, sieved debris. ExpL # 162, 163, 1♂, 3♀ (MZLU, MHNG); Nuwara Eliya, 1800m, 11.I.65, R. Mussard, 8♂, 4♀ (MHNG).

Description. 2.2-2.6 mm. Punctuation dense and fairly coarse on most of head, fine and dense near vertexal foveae and throughout body. Pubescence long, particular long setae present on head, pronotum, elytra and abdomen. Head with vertexal carina fairly high, robust anteriorly, extending from frontal sulcus to neck. Vertexal foveae in impressions. Frontal sulcus V-shaped to arcuate. Antennae long; pedicel as long as combined length of segment 3 and half of segment 4; segments 4, 6 and 8 each distinctly longer than wide; segment 7 about 1.6 to 1.9 times as long as wide. Pronotum with median sulcus deep and long, usually slightly widened anteriorly, extending up to anterior ninth or tenth of pronotal disc. Elytra with discal stria fairly shallow, not clearly delimited, extending about up to apical third. Wings completely reduced. Discal carinae of abdominal tergite 1 about as long as one sixth to fifth of tergal length, separated by almost half of tergal width. Metasternum with medio-apical, foveiform impression.

Male characters. Metasternum not impressed, with inconspicuous, sparse, long and recumbent pubescence. Femora slightly swollen. Mesotrochanters expanded at middle of mesal side and bearing tuft of oblique setae. Mesotibiae with robust, flat, apical denticle. Abdominal tergite 1 with excavated sexual patch deep, about twice as wide as long, almost as wide as half of tergal width and about as long as half of tergal length; anterior margin sharply delimited by prominent laminae at each side of centre; anterior wall vertical with small tubercle at centre bearing modified setae orientated



FIGS 192 to 195: *Batrisiella* Raffray, male abdominal excavation
192 and 193: *B. saucia* (Raffray); 194 and 195: *B. srilankana* sp. n.

apically. Bottom of excavation with subapical, semicircular ridge bearing at inner side two setal tufts orientated perpendicularly to body axis, and one central, pubescent tubercle at outer side. Lateral patches of very short, modified setae absent. Abdominal sternite 1 with median area raised to form inverted V-shaped ridge bearing very dense, recumbent pubescence; sternite 5 without obvious sexual characters. Aedeagus (Figs 199, 200) with dorsal process of median lobe short, narrowed in subapical part, abruptly widened in apical portion, hook-like at left side, with subapical fold at right side. Articular process inserted at right side, robust, arcuate, divided in two arms. Left arm partly exposed in ventral view and bifid or trifid at apex. Right arm of articular process below dorsal process in dorsal view, truncate or slightly arcuate at apex.

Comments. Jeannel (1961) examined a specimen from Anuradhapura that he identified as *B. caviventris*. Raffray (1894a) based the description of his *caviventris* on six specimens from Nuwara Eliya that were not examined by Jeannel. The Jeannel's *caviventris* is the common *B. aulica* described above. *B. aulica* is widely distributed but obviously absent from higher elevations and wet forest ecosystems. It has the pronotum, as the head, conspicuously densely and coarsely punctate. The true *caviventris* is from wet forest ecosystem at high elevation (Nuwara Eliya) and has the pronotum as noted by Raffray "plus minusve disperse punctato". The specimens recorded above are consistent with the description Raffray gave. A confusion of this species is unlike because no other species of *Batrasiella* known to occur in the Central Highlands exhibits such characters.

***Batrasiella dryas* sp. n.**

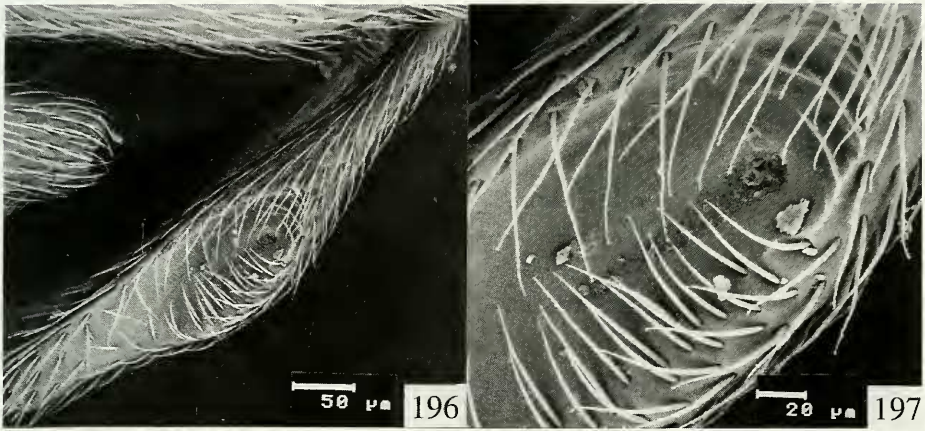
Figs 186, 187, 201

Holotype ♂: SRI LANKA: CENTRAL PROV.: Mahaweli Ganga, 7 mls downstream Kandy, ca 450m, sandy river banks, 30.I.70, ExpG # 34 (MHNG).

Paratypes: SRI LANKA: NORTH CENTRAL PROV.: Ritigala, sandy stream banks, 7.II.70, ExpG # 53, 15 ♂, 13 ♀ (MHNG, PCSK); Anu. Dist., Irrigation Bungalow Padaviya 180 ft, 27.II.-9.III.70, D. R. Davis & W. Rowe, 23 ♂ (NMNH, MHNG); Alut Oya, sandy river banks, 3.II.70, ExpG # 43a, 1 ♂ (MHNG); EASTERN PROV.: Maha Oya, sandy river banks 11.II.70, ExpG # 60, 7 ♂, 8 ♀ (MHNG); CENTRAL PROV.: same data as holotype, 4 ♂, 14 ♀ (MHNG); same data but 11.II.70, ExpG # 57b, 1 ♀ (MHNG); Bad. Dist., 5 mls E Mahiyangana Hasalaka, 200ft, 16.XI.74, C. Gans, P. Fernando, S. Farook, 83 ♂ (NMNH, NMCC, MHNG, PCSK); SABARAGAMUWA PROV.: Ambepussa, 5.XII.72, ExpG # 62, 1 ♂ (MHNG); 2 mls S Dambulla, 7.II.70, sandy river banks, ExpG # 54, 12 ♂, 18 ♀ (MHNG, PCSK).

Description. Length 1.8-1.9 mm. Punctuation almost throughout very fine and dense, often less fine posterior antennal tubercles and on frontoclypeus than on remainder of body and appendages. Pubescence short, particular long setae present on head and pronotum. Head with median vertexal carina low, extending from frontal sulcus to neck. Vertexal foveae not in impressions. Frontal sulcus slightly arcuate. Antennae short; pedicel almost as long as combined length of segments 3 and 4; segments 4, 6 and 8 each distinctly longer than wide; segment 7 about 1.6 to 2 times as long as wide. Pronotum with median sulcus deep and long, not narrowed anteriorly, extending up to anterior fifth or sixth of pronotal disc. Elytra with discal stria fairly deep, delimited by carina, extending about up to apical fifth. Discal carinae of abdominal tergite 1 about as long as one sixth to fifth of tergal length, separated by almost half of tergal width. Metasternum with median sulcus.

Male characters. Metasternum with median part impressed, bearing inconspicuous, dense, short and recumbent pubescence. Mesotrochanters expanded, with mesal side truncate and bearing oblique setae. Mesotibiae with minute apical denticle. Abdominal tergite 1 with excavated sexual patch (Figs 186, 187) deep and large, much wider than long, about as wide as five sixth of tergal width and longer than half of tergal length, with anterior margin in middle sharply delimited; anterior wall steep, with small tubercle in centre and several particular, horizontal setae orientated apically. Bottom of excavation separated by slightly raised middle bearing recumbent setae forming V-shaped pattern, and with two small, shallow, foveiform impressions. Lateral parts of excavation oblique, not clearly delimited, with oval patches of very short, modified setae; posterior part almost horizontal, not clearly delimited. Abdo-



FIGS 196 and 197

Batrisiella puberula Jeannel, male metatibia, scale bar = 50 μm (196), dtto, mesal patch of pores, scale bar = 20 μm (197).

minimal sternite 1 lacking obvious sexual characters, sternite 5 with short, transverse row of robust setae delimited at each side by minute lobe. Aedeagus (Fig. 201) with dorsal process of median lobe wide, bilobed at apex, left lobe membranous and bearing minute spicules. Articular process inserted at left side, curved and gradually narrowed in basal portion, slender and slightly arcuate in apical portion, in ventral view completely overlapped by dorsal process.

Comments. This species may be distinguished from its congeners with similar, long antennae and fine punctation by the shape of the tergal excavation in male, in particular by the presence of foveiform impressions at each side of the excavation.

***Batrisiella favea* sp. n.**

FIGS 188, 189, 202

Holotype δ : SRI LANKA: NORTHERN PROV.: Murunkan, litter in savanna, 5.II.70, ExpG # 46 (MHNG).

Paratypes: SRI LANKA: NORTH CENTRAL PROV.: Alut Oya, 3.II.70, ExpG # 43a, 1 δ (MHNG); Medawachchiya, Resthouse at light, 6.II.70, ExpG # 51a, 3 δ (MHNG); Vavuniya Dist., Parayanalankulam Irrigation Canal, 25 mls NW Medawachchiya, 100ft, 20-25.III.70, D. R. Davis & W. Rowe, 1 δ (NMNH); Anu. Dist., Wildlife Soc. Bungalow, Hunuwilagama, Wilpattu, 200 ft, 10-19.III.70, D. R. Davis & W. Rowe, 10 δ (NMNH, MHNG, PCSK); Anu Dist., Hunuwilagama near Wilpattu, 200 ft, black light, 28.X.-3.XI.76, G. F. Hevel, R. E. Dietz, S. Karunaratne, D. W. Balasooriya, 3 δ (NMNH, MHNG); Anu. Dist., Padaviya, 180 ft, 2-8.XI.70, O. S. Flint Jr., 3 δ (NMNH); Irrigation Bungalow Padaviya 180 ft, 27.II.-9.III.70, D. R. Davis & W. Rowe, 9 δ (NMNH, MHNG); CENTRAL PROV.: Kandy Dist., 5 mls NW Mahiyangana, 30.III.-9.IV.71, blacklight at Hasalaka Irrigation Bungalow, P. & P. Spangler, 1 δ (NMNH, MHNG); Kandy, 1800 ft, Peak View Motel, 15-24.I.70, D. R. Davis & W. Rowe, 1 δ (MHNG); Bad. Dist., 5 mls E Mahiyangana Hasalaka, 200ft, 16.XI.74, C. Gans, P. Fernando, S. Farock, 4 δ (NMNH, MHNG); SABARAGAMUWA PROV.: Rat. Dist., Uggalkaltota Irrigation Bungalow, 350 ft, 31.I.-8.II.70, D. W. Davis & W. Rowe. 1 δ (NMNH).

Description. Length 1.90-1.95 mm. Punctuation almost throughout very fine and dense, usually few punctures posterior to antennal tubercles coarser than those on

remainder of body. Pubescence short, particular long setae absent. Head with median vertexal carina low, extending from frontal sulcus to neck. Vertexal foveae in impressions. Frontal sulcus almost transverse. Antennae short; pedicel almost as long as combined length of segments 3 and 4; segments 4, 6 and 8 each slightly longer than wide; segment 7 about 1.4 times as long as wide. Pronotum with median sulcus deep and long, not narrowed anteriorly, extending up to anterior fifth or sixth of pronotal disc. Elytra with discal stria throughout deep and delimited by carina, extending about up to apical eighth. Discal carinae of abdominal tergite 1 about as long as one sixth to fifth of tergal length, separated by almost half of tergal width. Metasternum with median sulcus.

Male characters. Metasternum with median part impressed, bearing conspicuous, dense, fairly long and recumbent pubescence. Mesotrochanters expanded, with mesal side truncate and bearing oblique setae. Mesotibiae with short apical denticle. Abdominal tergite 1 (Figs 188, 189) with excavated sexual patch deep, about as long as wide, about as wide as third of tergal width and as long as half of tergal length; anterior margin in middle sharply delimited. Posterior part raised to form a large, pubescent tubercle narrowed toward mid-line to form keel and delimited laterally by ridges; anterior wall of tubercle bearing setal tufts orientated laterally. Anterior wall of excavation steep, with two parallel carinae and minute tubercle bearing modified setae. Disc anterior to excavation with two small foveiform impressions; lateral patches of very short, modified setae small and round. Abdominal sternites lacking obvious sexual characters. Aedeagus (Fig. 202) with dorsal process of median lobe wide, produced at right side of apical part to form large apophysis with acute distal tip and blunt proximal tip, and with left side produced to form small, subapical point. Articular process inserted at left side, arcuate, with simple, slender apical part.

Comments. This species may be distinguished by the short antennae and the widely separated carinae of the tergite 1, in combination with the tergal excavation as wide as half of the tergite and the presence of foveae and impressions anterior of the tergal excavation.

***Batrasiella illicibrosa* sp. n.**

Figs 190, 191, 203

Holotype ♂: SRI LANKA: NORTH CENTRAL PROV.: Polonnaruwa, 150m, 13.I.65, R. Mussard (MHNG).

Paratypes: SRI LANKA: NORTH CENTRAL PROV.: Polonnaruwa, 3.III.72, K. V. Krombein & P. B. Karunaratne, 2 ♂ (NMNH); WESTERN PROV.: Yakkala, 18 mls NE Colombo, 1-8.III.62, at light, ExpL # 10, 1 ♂ (MZLU); Col. Dist., Beyagama, sea level, 20-21.VIII.73, G. Ekis, 8 ♂ (NMNH, MHNG); Col. Dist., Hanwella Resthouse, 200ft, black light, 2.X.76, G. F. Hevel, R. E. Dietz, S. Karunaratne, D. W. Balasooriya, 1 ♂ (NMNH); Col. Dist., Malawana, sea level, 22.VIII.73, at black light, G. Ekis, 1 ♂ (MHNG); SABARAGAMUWA PROV.: Ratnapura, at light, 22.II.62, ExpL # 95, 2 ♂ (MZLU, MHNG); Ratnapura, Resthouse, 200-300 ft, 24.X.76, black light, G. F. Hevel, R. E. Dietz, S. Karunaratne, D. W. Balasooriya, 4 ♂ (NMNH, MHNG, PCSK); Rat. Dist., Gilimale Lumber Mill, 115 ft, black light, 20-25.X.76, G. F. Hevel, R. E. Dietz, S. Karunaratne, D. W. Balasooriya, 1 ♂ (NMNH); UVA PROV.: Westminster Abbey 25 mls ESE Bibile, 7.III.62, ExpL # 119:III, 1 ♂ (MZLU); Amp. Dist., Inginiyagala, 250 ft, black light, 21-24.XI.76, G. F. Hevel, R. E. Dietz, S. Karunaratne, D. W. Balasooriya, 1 ♂ (NMNH); SOUTHERN PROV.: Gal. Dist., Udugama, Kanneliya Jungle, 400 ft, 6-12.X.73, at black light, K. V. Krombein, P. B. Karunaratne, P. Fernando, J. Ferdinando, 2 ♂ (NMNH, MHNG); Gal. Dist., Kanneliya jungle, 400m, 13-16.VIII.72, K. V. Krombein & P. B. Karunaratne, 2 ♂ (NMNH, MHNG).

Description. Length 1.7-1.8 mm. Punctuation almost throughout very fine and dense, coarser posterior to antennal tubercles than on remainder of body. Pubescence long, head, pronotum and abdomen with several particular long setae. Head with median vertexal carina fairly high, extending from frontal sulcus to neck. Vertexal foveae in impressions. Frontal sulcus broadly U-shaped to almost transverse. Antennae fairly long; pedicel almost as long as combined length of segments 3 and 4; segments 4, 6 and 8 each distinctly longer than wide; segment 7 almost twice as long as wide. Pronotum with median sulcus deep and long, not or hardly narrowed anteriorly, extending up to anterior fifth or sixth of pronotal disc. Elytra with discal stria throughout deep and delimited by carina, extending about up to apical fourth. Discal carinae of abdominal tergite 1 about as long as one eighth to seventh of tergal length, separated by almost half of tergal width. Metasternum with elongate, medio-apical impression.

Male characters. Metasternum with median part impressed, bearing inconspicuous, short, recumbent pubescence. Mesotrochanters expanded, with basal part of mesal side truncate and bearing oblique setae. Mesotibiae with robust apical denticle. Abdominal tergite 1 (Figs 190, 191) with excavated sexual patch deep and very large, extended almost to lateral margins and from basis almost to apical margin of tergite; basomedian part of disc moderately impressed, delimited by sharp, transverse carina with slightly prominent and acute centre, surface below transverse carina vertical, laterally carina steeply inclined toward bottom of impression. Centre of vertical wall with minute tubercle and horizontal, modified setae. Bottom of impression swollen mesally, with dense, short pubescence and with two arcuate, fairly high, admesal carinae. Lateral patches of very short, modified setae situated along lateral margins of tergite, long and narrow. Abdominal sternite 1 lacking obvious sexual characters, sternite 5 impressed, with small mediobasal tubercle bearing erect setae. Aedeagus (Fig. 203) with dorsal process of median lobe strongly narrowed apically, subapical notch separating short lamina, acute apex, and flat, hook-like apophysis at right side, near apex. Articular process inserted at left side, hardly arcuate, with simple, curved apical part.

Comments. This species resembles *B. dryas* from which it differs notably by the presence of two carinae at the bottom of the tergal excavation.

Batrasiella lewisi Jeannel

Fig. 204

Batrasiella lewisi Jeannel, 1961: 439.

Type material. Holotype ♂, SRI LANKA, WESTERN PROV., labelled: Colombo. On Coast level. 7-27.IV.82. / Ceylon. G. Lewis 1910-320. / Type (red) *Batrasiella Lewisi* Jean. (hand-written) R. Jeannel det., 195 / *Batrasiella lewisi* Jeannel, det. Löbl, 2000 (NHML).

Paratypes: 1 ♀, labelled Kandy 1,546-1,27 ft., 6.IV.82 / Ceylon G. Lewis 1910-320 (NHML) in poor condition (most of the thorax, the metalegs and the abdomen are lost), and 1 ♀, labelled Bogawantalawa. 4,500-5,200 ft. 21.III.4.IV.82 / Ceylon. G. Lewis. 1910-320 / *Arthromelus Lewisi* n (hand-written by Jeannel) (NHML). These two females are similar to the holotype but we cannot confirm their conspecificity.

Description. Length 2.15 mm. Punctuation very fine and sparse on most of head and throughout pronotum and elytra. Punctuation on antennal tubercles and frontoclypeus dense and fairly coarse. Abdominal punctuation less fine than elytral

and pronotal punctuation. Pubescence long on head, pronotum and elytra, short on abdomen. Head, pronotum, elytra and abdomen with several particular long setae. Head with median vertexal carina fairly high, extending from frontal sulcus to neck. Vertexal foveae in impressions. Frontal sulcus broadly V-shaped. Antennae long; pedicel distinctly shorter than combined length of segments 3 and 4; segments 4, 6 and 8 each about 1.5 times as long as wide; segment 7 twice as long as wide. Pronotum with median sulcus deep and long, not narrowed anteriorly, extending up to anterior fifth of pronotal disc. Elytra with discal stria throughout deep and delimited by carina, extending about up to apical fourth. Discal carinae of abdominal tergite 1 broadly triangular, very short, about as long as one tenth of tergal length, separated by about fifth of tergal width. Basolateral impressions of tergite 1 comparatively deep. Tergites 2 and 3 with subbasal, transverse carinae, area between subbasal carina and basal margin of tergite 2 impressed. Metasternum small, shallow, mediobasal impression.

Male characters. Metasternum with median part flattened, bearing short, recumbent pubescence. Profemora swollen. Mesal side of mesotrochanters flattened and with small, basal denticle. Mesotibiae with straight, apical denticle. Abdominal tergite 1 with excavated sexual patch deep, 1.4 times as wide as long, about as long as two thirds of tergite and as wide as half of tergal width. Two shallow, smooth impression present between each discal carina and excavation. Anterior part of excavation less deep than posterior part, separated by sharp, transverse carina. Middle of excavation raised to form robust, mesal ridge. Centre of transverse carina touching mesal ridge and raised to form small plate bearing short, very dense tuft of setae curved apically. Mesal ridge joined with two ridges diverging posteriorly and delimiting two small, round impressions. Bottom of excavation smooth. Lateral margins of excavation bearing setae directed mesally. Lateral patches of modified setae absent. Abdominal sternites lacking obvious sexual characters (characters of strongly damaged sternite 5 unknown). Aedeagus (Fig. 204) with dorsal process of median lobe notched apically to form narrow apical apophysis and fairly wide lamina. Articular process inserted at left side, arcuate, gradually narrowed toward conspicuously slender apical part.

Comments. This species is similar to *B. caviventris* from which it may be easily separated by the close discal carinae of the tergite 1 and the unmodified male sternite 1.

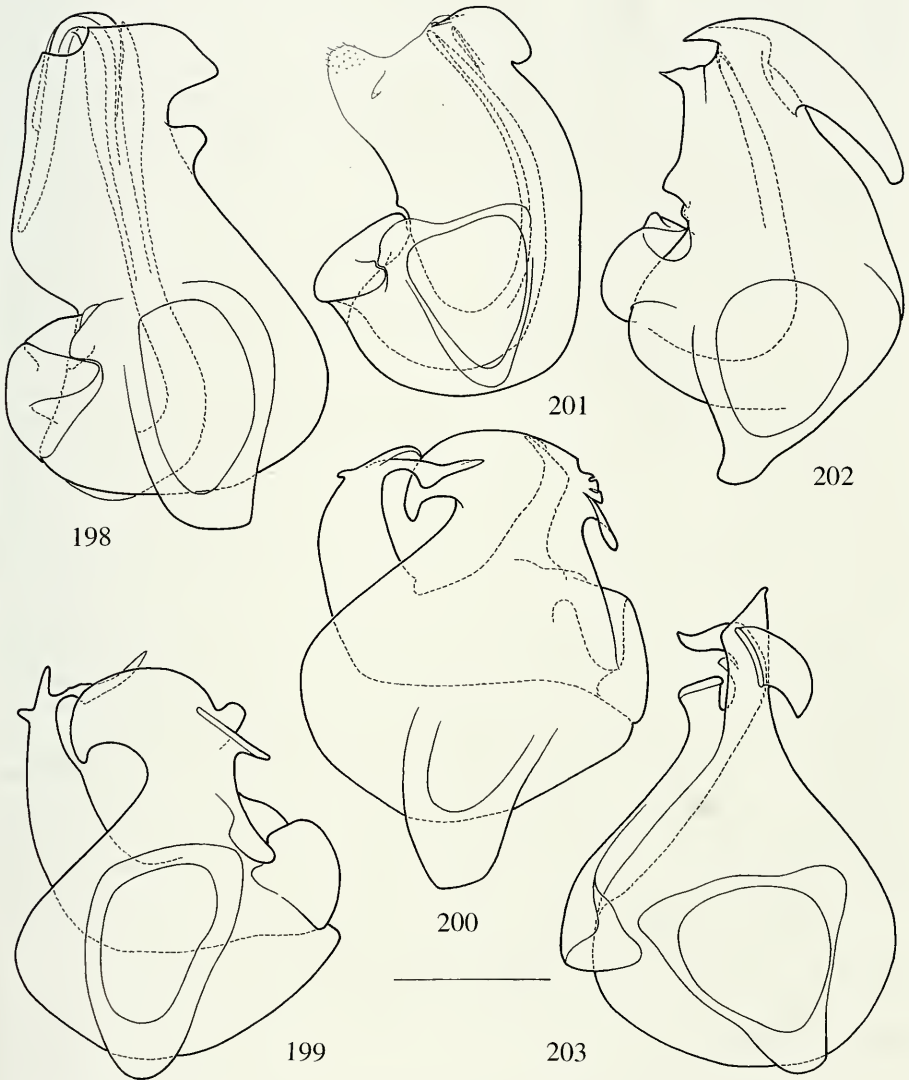
***Batrasiella puberula* Jeannel**

Figs 196, 197, 205

Batrasiella puberula Jeannel, 1961: 437.

Type material. One ♂, labelled: 506.Lunawa 16.9.59 Pselaph. /*Batrasiella puberula* n. (hand-written by Jeannel) (MNHN). This specimen was not labelled as a type. Jeannel (1961) stated that his description is based on a single male, lacking sexual characters on the abdominal tergite 1. The published type data are consistent with the labels and the characters of the specimen. We consider this specimen to be the holotype also because no other Sri Lankan species of *Batrasiella* lacks the tergal sexual patch.

Additional material. SRI LANKA: NORTHERN PROV.: 4-5 mls SW Mullaitivu, forest litter, 6.II.70, ExpG # 50b, 1 ♂ (MHNG); NORTH WESTERN PROV.: Medawachchiya, 6.II.70, ExpG # 51, 1 ♂ (MHNG); WESTERN PROV.: Colombo, Colpetty, 5-13.I.62, ExpL # 2, 3 ♂ in



FIGS 198 to 203: *Batrisiella* Raffray, aedeagi in ventral view

198: *B. aulica* sp. n.; 199 and 200: *B. caviventris* (Raffray); 201: *B. dryas* sp. n.; 202: *B. favea* sp. n.; 203: *B. illicibrosa* sp. n. Scale bar = 0.1 mm.

garden, 1 ♂ at light (MZLU, MHNG); Yakkala, 18 mls NE Colombo, 14-31.I.62, at light, ExpL # 10, 10 ♂ (MZLU, MHNG, PCSK); same data but 1-28.II.62, 1 ♀ (MZLU); SABARAGAMUWA PROV.: Ratnapura, at light, 22.II.62, ExpL # 95, 4 ♂ (MZLU); Rat. Distr., Uggalkatota, 350 ft, Irrigation Bungalow, 31.I.-8.II.70, D. R. Davis & W. Rowe, 1 ♂ (NMNH); Rat. Dist., Gilimale Lumber Mill, 7.VII.73, 115 ft, G. Ekis, 1 ♂ (MHNG); CENTRAL PROV.: Pidurutalagala 2 mls NW Nuwara Eliya, 4.III.62, indigenous bamboo forest, in the shrub layer, sieved in debris, ExpL # 116:1, 1 ♂ (MZLU); UVA PROV.: Inginiyagala, Resthouse at light, 12.II.70, ExpG # 63, 1 ♂ (MHNG); Amp. Dist., Inginiyagala, black light trap, 7-8.IX.75, D. M. Davies, S. Karunaratne, D. W. Balasooriya, 2 ♂ (NMNH, MHNG); SOUTHERN PROV.: Gal. Dist., Udugama, Kanneliya Jungle, 400 ft, 6-12.X.73, at black light, K. V. Krombein, P. B. Karunaratne, P. Fernando, J. Ferdinando, 1 ♂ (NMNH); Pattuvil, 1-12.VII.83, O. Mehl, 1 ♂ (PCPH); SRI LANKA: Ceylon, Coll. Cl. Müller, 8 ♂ (ZSMC).

Description. Length 1.90-1.95 mm. Punctuation almost throughout very fine and dense, that on and posterior to antennal tubercles usually more dense and less fine than on remainder of body, on elytra still finer than on pronotum and abdomen. Pubescence short, particular long setae absent. Head with median vertexal carina low, extending from frontal sulcus to neck. Vertexal foveae in impressions. Frontal sulcus inverted V-shaped, open. Antennae short; pedicel slightly longer than segment 3; segments 4, 6 and 8 each slightly longer than wide; segment 7 about 1.2 times as long as wide. Pronotum with median sulcus deep and long, not or slightly narrowed anteriorly, extending up to anterior eighth or ninth of pronotal disc. Elytra with discal stria throughout deep and delimited by carina, extending about up to apical ninth. Discal carinae of abdominal tergite 1 almost as long as one third of tergal length, separated by about one fourth to one third of tergal width.

Male characters. Metasternum with sparse and short pubescence, deep and elongate mesal impression. Mesotrochanters with acute, curved denticle at base of mesal side. Mesotibiae with oblique, fairly robust apical denticle. Metatibiae abruptly widened in apical two third, with flattened mesal side; apical half of outer side deeply impressed, with mesal pores (Figs 196, 197). Abdominal tergites and sternites lacking obvious sexual characters. Aedeagus (Fig. 205) with dorsal process of median lobe hardly narrowed apically, with apical margin obliquely truncate and short, subapical lamina at right side. Articular process inserted at left side, strongly arcuate, gradually narrowed, separated in to two rods.

Comments. This species may be easily separated from its congeners by the widened metatibiae and lack of tergal excavation in male.

Batrisiella remyi Jeannel

Fig. 206

Batrisiella remyi Jeannel, 1961: 439.

Type material. Jeannel (1961) stated "Type: Hatton (Mus. Paris)" but mentioned 1 ♂ and 1 ♀ from Hatton, collected by Rémy on 27.VIII.59. Implicitly, but not explicitly, the male was designated as holotype. Other specimens mentioned by Jeannel are 1 ♂ and 1 ♀ from Dikoya and 1 ♂ from Colombo. We have examined the ♂ from Hatton, labelled "456. Hatten 27.8.59. Pselaph. (hand-written)/1/Arthromelus Remyi n" (hand-written by Jeannel) (MNHN) and the aedeagus of the specimen from Colombo (NHML).

Additional material. SRI LANKA: UVA PROV.: Haputale, 1350m, 23.I.70, ExpG # 19, 10 ♂, 19 ♀, (MHNG, PCSK); Haputale, 1500m, 17.I.65, R. Mussard, 1 ♀ (MHNG); Stream 2 mls NW Haldummulla, 3600ft, 2.III.62, ExpL # 111, 1 ♂ (MZLU).

Description. Length 2.15-2.20 mm. Punctuation dense and very fine on most of body and appendages. Frons and most of vertex with coarse, very dense, partly confluent punctuation. Punctuation on narrowed, apical portion of femora much denser than that on remainder of femora. Pubescence fairly short, head, pronotum and abdomen with several particularly long setae. Head with median vertexal carina fairly high, extending from frontal sulcus to plan of vertexal foveae. Vertexal foveae not in impressions. Frontal sulcus weakly arcuate. Antennae long; pedicel slightly longer than segment 3; segments 4, 6 and 8 each much longer than wide; segment 7 about twice as long as wide. Pronotum with median sulcus deep and long, not narrowed anteriorly, extending up to anterior eighth of disc. Elytra with discal stria very deep, delimited by carina, extending about to apical fourth of discal length. Discal carinae of abdominal tergite 1 short, usually exposed, about as long as one sixth of tergal length, separated by half or slightly more than half of tergal width.

Male characters. Median part of metasternum impressed, with deep, elongate, medio-apical fovea. Metasternal pubescence consisting of dense, recumbent, shorter and longer setae. Mesotrochanters with acute denticle in middle of mesal side. Mesotibiae with long, flat, apical denticle, exceeding twice tibial width. Metafemora curved apically. Abdominal tergite 1 with excavated sexual patch wider than long, about as wide as half of tergal width and as long as two third of maximal tergal length; with contours not clearly delimited, except in middle of anterior and posterior margins. Middle portion with two deeply impressed areas; anterior impressed area circular, with raised anterior margin and centre of posterior margin, posterior impressed area semicircular, with anterior margin raised. Anterior impression with low central tubercle bearing two erect, slightly diverging setal tufts; posterior impression with high tubercle pubescent at tip and bearing horizontal setae arising from its anterior edge. Middle part of sternite 1 raised to form transverse ridge strongly projected at edges ventrally, to form pair of large, horn-like processes. Following sternites slightly impressed in middle. Aedeagus (Fig. 206) with dorsal process of median lobe hardly very wide, with apical margin oblique and slightly sinuate, minute point at left apical angle, lobed at right apical edge. Articular process inserted at left side, robust, angulate in middle, gradually narrowed posterior to middle, with two or three slender, acute apophysis and strongly narrowed apex.

Comments. This species may be distinguished from its congeners, *B. retusa* excepted, having long antennae and wide tergal excavation in male, by the male sternite 1 bearing a transverse ridge. It differs notably from *B. retusa* by the long metatibial denticle in male.

Batrisiella retusa sp.n.

Fig. 207

Holotype ♂: SRI LANKA: CENTRAL PROV.: Madulkete, 1000m, 27.I.64, R. Mussard (MHNG).

Paratypes: SRI LANKA: CENTRAL PROV.: same data as holotype, 1 ♂ (MHNG); Madulkete, 30.I.64, R. Mussard, 1 ♂, 1 ♀ (MHNG).

Description. Length 2.25 mm. Very similar to *B. remyi* but differs by the head with comparatively coarse punctuation limited on to frontoclypeus, antennal tubercles

and, eventually, minute areas posterior to antennal tubercles. Discal carinae of tergite 1 shorter, about as long as one tenth of tergite. Male sexual characters diagnostic.

Male with profemora slightly, mesofemora strongly swollen. Mesotibiae with robust, flattened, apical denticle about as long as tibial wide. Tergite 1 with transverse carina separating anterior and posterior impression of sexual excavation. Transverse ridge of abdominal sternite 1 higher and more robust than in *B. remyi*, less raised at lateral edge, with posterior side vertical, bearing rows of horizontal setae. Aedeagus (Fig. 207) with dorsal process of median lobe strongly narrowed apically, apical margin sinuate, angulate at left edge, prominent at right edge. Articular process inserted at left side, robust, arcuate, widened at apex, and with horn-like apical apophysis.

Comments. See comments under *B. remyi*.

***Batrisiella saucia* (Raffray)**

Figs 192, 193, 208

Batrisesodes saucius Raffray, 1901: 27

Batrisesocenus saucius; Raffray, 1908: 172.

Batrisiella saucia; Jeannel, 1961: 438.

Type material. Lectotype, implicitly designated by Jeannel (1961) labelled: Ceylon Horn/Trincomalee/TYPE (red)/Muséum Paris 1917 coll. A. Raffray/B.saucius A. Raffray det./Cranodes saucius Raffr. (handwritten by Jeannel)/ *Batrisiella saucia* (Raffray) det. Löbl & Kurbatov (MNHN).

Additional material. SRI LANKA: NORTH CENTRAL PROV.: Polonnaruwa, 150m, 14.I.65, R. Mussard, 1 ♂ (MHNG); Polonnaruwa, 25.IV.73, at light, M. Tronquet, 1 ♂ (MHNG); Anu. Dist., Irrigation bungalow Padaviya, 180ft, 27.II.-9.III.70, D. R. Davis & W. Rowe, 7 ♂ (NMNH, MHNG); Anu. Dist., Padaviya, 180ft, 2-8.XI.70, O. S. Flint Jr., 5 ♂ (NMNH); Habarana, 7-8.II.62, at light, ExpL # 55, 1 ♂ (MZLU); Wilpattu N. P., Maradan Maduwa, 23 mls NW Anuradhapura, 2.II.62, at light, ExpL # 48, 2 ♂ (MZLU, MHNG); Anu. Dist., Wildlife Soc. Bulgalow, Hunuwilagama, Wilpattu, 200ft, 10-19.III.70, D. R. Davis & W. Rowe, 54 ♂ (NMNH, MHNG, PCSK); Hunuwilagama near Wilpattu, 200 ft, black light, 28.X-3.XI.76, G. F. Hevel, R. E. Dietz, S. Karunaratne, D. W. Balasooriya, 2 ♂ (NMNH, MHNG); Sigiriya, 26.III.73, M. Tronquet, 2 ♂ (MHNG); CENTRAL PROV.: Bad. Dist., 5mi E Mahiyangana, Hasalaka, 200ft, 16.XI.74, C. Gans, P. Fernando, S. Farock, 16 ♂ (NMNH, MHNG); Ban. Dist., 5 mls E Mahiyangana, 30.III.-9.IV.71, blacklight at Hasalaka Irrigation Bulgalow, P. & P. Spangler, 11 ♂ (NMNH, MHNG); Kan. Dist., Madugoda ca 2600ft, 1.IV.73, at black light, Baumann & Cross, 1 ♂ (NMNH); UVA PROV.: Diyaluma Falls, ca 450m, 25.I.70, ExpG # 26, 1 ♂ (MHNG); SABARAGAMUWA PROV.: Rat. Dist., Uggalkaltota 350 ft, Irrigation bulgalow, 31.I.-8.II.70, D. R. Davis & W. Rowe, 21 ♂ (NMNH, MHNG); WESTERN PROV.: Yakkala, 18 mls NE Colombo, 14.I.62, at light, ExpL # 10, 1 ♂ (MZLU); SOUTHERN PROV.: Tissamaharama, 23.I.70, Resthouse at light, ExpG # 22, 1 ♂ (MHNG).

Description. Length 1.65-1.75 mm. Punctuation dense and very fine on most of body and appendages. Antennal tubercles, lateral areas posterior to antennal tubercles and frontoclypeus with punctuation fairly coarse and denser than on remaining surface. Pubescence short, particularly long setae absent. Head with median vertexal carina low, extending from frontal sulcus to plan of vertexal foveae. Vertexal foveae in impressions. Frontal sulcus moderately arcuate. Antennae short; pedicel about as long as segment 3 and half of segment 4 combined; segments 4, 6 and 8 each slightly longer than wide; segment 7 about 1.4 times as long as wide. Pronotum with median sulcus deep and long, not or hardly narrowed anteriorly, extending up to anterior

fourth or fifth of disc. Elytra with discal stria deep, delimited by carina, extended about to apical sixth of elytral length. Discal carinae of abdominal tergite 1 short, usually exposed, about as long as one sixth of tergal length, separated by slightly less than half of tergal width. Abdominal sternite 1 with basomedian ridge flat, about as long as one third of mesal length of sternite.

Male characters. Metasternum with large, foveiform, medio-apical impression; median metasternal area near mesocoxae flattened. Metasternal pubescence inconspicuous, very short, dense, recumbent. Mesal side of mesotrochanters with oval projection bearing short pubescence. Mesotibiae with acute apical denticle. Abdominal tergite 1 (Figs 192, 193) with excavated sexual patch wider than long, about as wide half of tergal width and as long as third of maximal tergal length. Excavation well delimited anteriorly, with vertical anterior wall, not clearly delimited posteriorly and laterally. Bottom of excavation almost horizontal, slightly raised toward mid-line, with minute tubercle bearing two setal tuft and one small foveiform impression at each side of tubercle. Foveiform impressions sharply delimited anteriorly. Setal tufts curved and orientated latero-anteriorly. Anterior wall of excavation with mesal ridge bearing setae orientated posteriorly. Small, flat, oblique areas with patch of conspicuously short pubescence at each side of excavation. Abdominal sternites without obvious sexual characters. Aedeagus (Fig. 208) with dorsal process of median lobe narrow, angulate subapically, with apical portion expanded, almost anchor-like. Articular process inserted at left side, slender, sinuate, gradually narrowed apically, with acute tip.

Comments. This species may be distinguished by its short antennae in combination with the male tergal excavation not well delimited laterally, slightly raised mesally and with two foveiform impressions at bottom.

***Batrasiella shinghalensis* (Raffray)**

Fig. 211

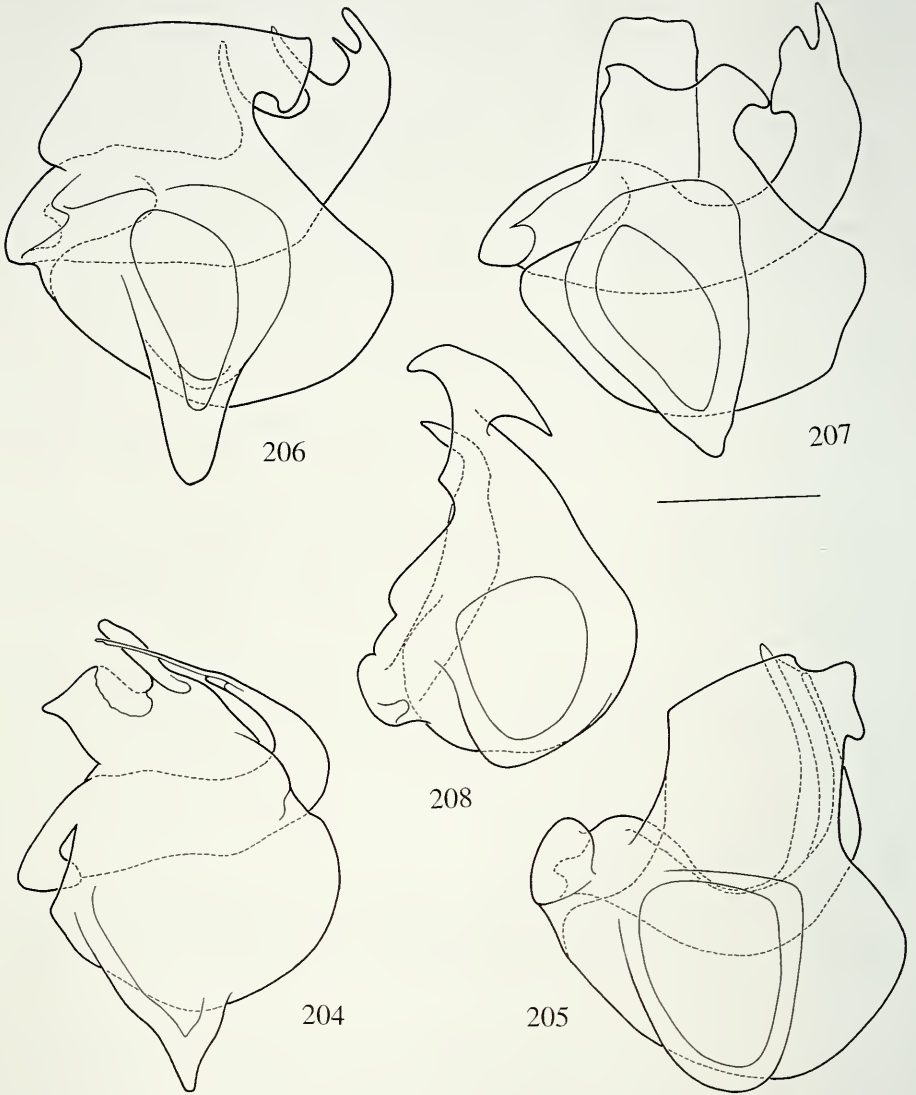
Batrisesodes shinghalensis Raffray, 1901: 27.

Batriscosenus shinghalensis Raffray, 1908: 172.

Batrasiella shinghalensis; Jeannel, 1961: 438.

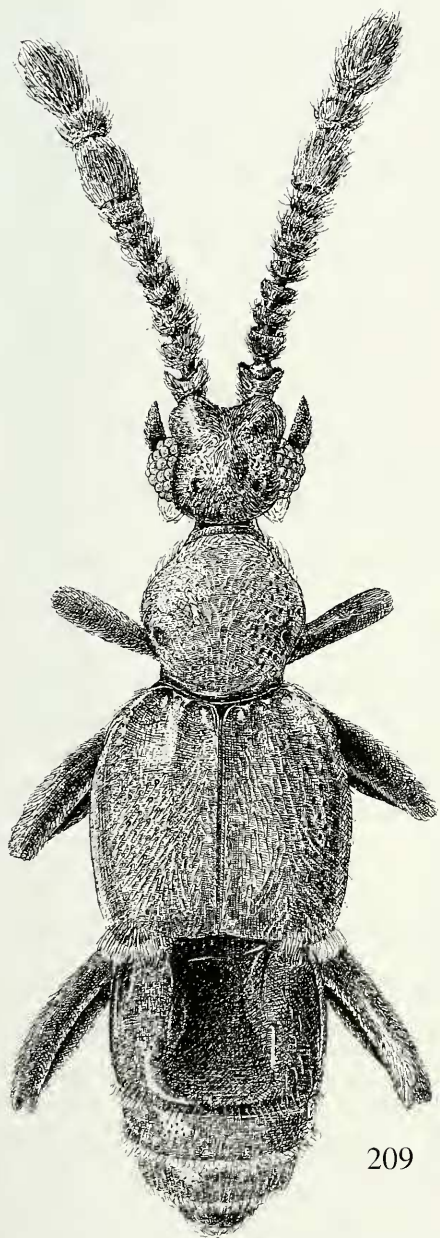
Type material. Lectotype, implicitly designated by Jeannel (1961), labelled: Bandarawella/ Horn/ Muséum Paris 1917 coll. A. Raffray/TYPE (red) /B.singhalensis A.Raffray det./ Cratnodes singalensis (hand-written by Jeannel)/ *Batrasiella shinghalensis* (Raffray) det. Löbl & Kurbatov (MNHN).

Description. Length 1.9 mm. Punctuation dense and coarse on and posterior to antennal tubercles, very fine and fairly dense on remainder of head, and on pronotum, elytra and femora. Basal portion of abdominal tergite 1 with punctuation similar to that of elytra, remainder of tergal surface with fairly coarse and very dense punctuation. Pubescence apparently fairly long (strongly damaged) on body, short on appendages. Presence of particular long setae unknown. Head with median vertexal carina fairly high, extending from neck to frontal sulcus. Vertexal foveae in impressions. Frontal sulcus broadly V-shaped. Antennae short; pedicel about as long as segment 3 and half of segment 4 combined; segments 4, 6 and 8 each slightly longer than wide; segment 7 about 1.4 times as long as wide. Pronotum with median sulcus evenly deep and narrow, reaching anterior to seventh of disc. Elytra with discal stria throughout well delimited, extending about up to apical fifth. Discal carinae of abdominal tergite 1



FIGS 204 to 208: *Batrisiella* Raffray, aedeagi in ventral view

204: *B. lewisi* Jeannel; 205: *B. puberula* Jeannel; 206: *B. remyi* Jeannel; 207: *B. retusa* sp. n.;
 208: *B. saucia* (Raffray). Scale bar = 0.1 mm.



Figs 209 and 210
Baceysus preciosus gen. n., sp. n.

about as long as one fifth of tergal length, separated at base by slightly less than half of tergal width.

Male characters. Middle part of metasternum slightly convex; with medio-apical, deep, foveiform impression. Metasternal pubescence fairly long, sparse, inconspicuous. Mesotrochanters with fairly large, curved, blunt denticle arising from middle of mesal edge. Mesotibiae with minute, flat apical denticle. Abdominal tergite 1 with excavated sexual patch as wide as long, about as wide as one third of tergite and almost as long as half of maximal tergal length. Excavation deep, well delimited anteriorly and laterally by sharp margin, situated on obliquely inclined posterior part of tergite. Anterior, vertical wall of excavation with mesal ridge gradually raised upward to form a small tubercle bearing few very short setae. Bottom of excavation with large, medio-apical tubercle surrounded by high, sinuate carina; centre of carina bearing short setal tuft orientated anteriorly. Medio-apical tubercle with short pubescence. Tergal disc impressed between excavation and lateral margins and with patch of very dense punctation and very short pubescence close to lateral margins. Abdominal sternites lacking obvious sexual characters. Aedeagus (Fig. 211) with dorsal process of median lobe very short, fairly narrow, truncate obliquely, bearing two narrow apophysis at right side. One apophysis short, curved proximally, second apophysis slightly arcuate, orientated posteriorly, bearing small membranous lobe at apex. Articular process inserted at left side, robust at base, gradually narrowed apically, arcuate, apparently divided in two close rods, with tip extending posterior to median lobe.

Comments. Bandarawela is a locality in the Uva province close to places from which extensive collections were gathered. It is therefore surprising that subsequent workers have not found this species. The species is characterized by the short antennae in combination with the male tergite 1 impressed laterally of the excavation and the latter bearing a medio-apical tubercle.

***Batrasiella srilankana* sp. n.**

Figs 183, 194, 195, 212

Holotype ♂: SRI LANKA: EASTERN PROV.: Maha Oya, 11.II.70, on sandy banks and under vegetation along stream, ExpG # 60 (MHNG).

Paratypes: SRI LANKA: NORTHERN PROV.: forest 4-5 mls NW Mullaitivu, 6.II.70, ExpG # 50b, 3 ♂, 6 ♀ (MHNG); WESTERN PROV.: Col. Dist., Beyagama, sea level, 20-21.VII.73, G. Ekis, 1 ♂ (MHNG); Yakkala, 18 mls NE Colombo, 14.I.62, at light, ExpL # 10, 1 ♂ (MZLU); EASTERN PROV.: Maha Oya, 11.II.70, on sandy banks and under vegetation along stream, ExpG # 60, 5 ♂, 11 ♀ (MHNG, PCSK); CENTRAL PROV.: Kan. Dist., 5 mls NW Mahiyangana, Hasalaka Irrigation Bungalow, 30.III.-9.IV.71, black light, P. & P. Spangler, 1 ♂ (NMNH); SABARAGAMUWA PROV.: Rat. Dist., Gilimale Lumpur Mill, 115 ft, 7.VIII.73, G. Ekis, 1 ♂ (NMNH); Uva Prov., Amp. Dist., Inginiyagala, 250ft, black light, 21-24.XI.76, G. F. Hevel, R. E. Dietz, S. Karunaratne, D. W. Balasooriya, 1 ♂ (NMNH); Inginiyagala, at light, 12.II.70, ExpG # 63b, 1 ♂ (MHNG).

Description. Length 1.60-1.65 mm. Punctation very fine and fairly dense on head, pronotum, elytra and femora. Basal portion of abdominal tergite 1 with punctation similar to that of elytra, remainder of tergal surface with fairly coarse and very dense punctation. Pubescence on body and appendages very short, particular long setae absent. Head with median vertexal carina well developed, extending from neck

to frontal sulcus. Vertexal foveae in impressions. Frontal sulcus broadly V-shaped. Antennae short; pedicel about as long as segment 3 and half of segment 4 combined; segments 4, 6 and 8 each slightly longer than wide; segment 7 about 1.4 times as long as wide. Pronotum with median sulcus evenly deep and narrow, reaching anteriorly to seventh or eighth of disc. Elytra with discal stria throughout well delimited, extending about up to apical fourth. Discal carinae of abdominal tergite 1 distinct, almost as long as one fifth to one fourth of tergal length, separated at base by about third of tergal width.

Male characters. Middle part of metasternum flattened, with mesal impression deep, elongate and widened posteriorly. Metasternal pubescence dense, short and inconspicuous. Mesotrochanters with acute mesal margin and small, pubescent denticle at basomesal angle. Mesotibiae with small apical denticle. Abdominal tergite 1 (Figs 194, 195) with excavated sexual patch wider than long, about as wide as one third of tergal width and as long as one third of maximal tergal length. Excavation deep, well delimited anteriorly and laterally by sharp margin, bearing below meso-anterior margin small, vertical ridge with minute setal tuft orientated posteriorly, and at meso-apical margin large, pubescent protuberance delimited by semicircular carina. Tergal disc not impressed laterally of excavation, patch with conspicuously dense punctation at each side of excavation. Abdominal sternites lacking obvious sexual characters. Aedeagus (Fig. 212) with dorsal process of median lobe very short, fairly narrow, truncate obliquely, with narrow subapical notch producing small lobe at right side, and with arcuate apophysis arising from dorsal side. Articular process inserted at left side, robust, strongly curved in middle, moderately narrowed from middle to apex, consisting of three joined rods near tip.

Comments. This species is similar to *B. favea* from which it may be easily distinguished by the close discal carinae of the tergite 1 and lack of impressions between the tergal base and the excavation.

Baceysus gen. n.

Figs 209, 210

Type species *Baceysus pretiosus* sp. n. Gender: masculine.
Etymology: the name is an arbitrary combination of letters.

Description. Habitus as Figs 209 and 210. Length about 2 mm. Head, pronotum and elytra about in same plan, abdomen distinctly below plan of elytra.

Head constricted in middle, with rounded angles. Antennal insertions close. Frontoclypeus very narrow, vertical, overlapped by frontal lobe. Antennal tubercles distinct, lateral frontal foveae absent. Vertex with pair of foveae, lacking sulci. Occipital margin rounded in upper part, vertical below. Eyes very large, occupying most of lateral surface of head, deeply notched posteriorly, with large facets. Ocular-mandibular carinae angulate below eye, oblique along anterior eye margin. Venter of head flat, gular foveae in deep basomedian impression, basal margin abruptly constricted to form vertical wall below neck.

Antennae fairly long; scape short, thickened apically, with deep dorso-apical notch, apical angles not expanded and lacking glandular orifices. Segments 2 to 8 symmetrical. Pedicel small, conspicuously short, about twice as wide as long.

Segments 3 to 8 very short, wider than long. Club 3-segmented, large. Maxillary palpi short; segment 3 very short, much wider than long, narrowed mesally; segment 4 with broad basis.

Pronotum slightly longer than wide, widest in middle, disc slightly convex dorsally, anterior margin broadly rounded. Sulci, carinae, tubercles, spines and foveae lacking, except for one pair of outer antebasal foveae. Paranotal sulci absent.

Elytra comparatively long, flattened, not raised above level of pronotum, each with slightly arcuate lateral margins, strongly inclined near apical margins, basal ridge, four basal foveae, one subhumeral fovea and lateral carina. Lateral carina curved upward at subhumeral fovea, arcuate and extended posteriorly. Sutural striae lacking. Apical margins each bearing trichome.

Prosternum flat, short, with lateral foveae nude. Metasternum with median impression, metaxocal process V-shaped, notched a middle. Lateral metasternal foveae pubescent, close, larger than interval between them.

Legs fairly long. Procoxae comparatively short and cylindrical. Femora equally slender, subcylindrical. Tibiae gradually, slightly thickened toward apex. Tarsi slender, segments 2 and 3 about equally long.

Abdomen with five tergites visible in dorsal view, narrower and longer than elytra. Tergite 1 lying notably below level of elytral disc, much longer than following tergite, widest in middle, slightly narrowed toward base, with large, nude mediobasal foveae. Tergites 2 and 3 almost horizontal, with short inner marginal carinae. Tergite 4 inclined, with small, digitiform process between marginal carina and basolateral fovea. Tergite 5 (Fig. 214) with smooth central area. Sternite 1 with eight pubescent basal foveae. Outer basal foveae large, in basolateral impression, remaining six foveae much smaller than lateral foveae, equally large, grouped to pairs. Intercoxal process prominent, with mesal ridge, separated by narrow carina. Following sternites lacking foveae. Tip of sternite 6 (morphological sternite 8) exposed, forming opercle (Fig. 215). Aedeagus reduces to simple, plate like structure, with large ventral membrane of basal bulb.

Comments. *Baceysus* resembles the monospecific *Cylindroma* Raffray, with *C. excavata* Raffray from Sumatra, and to a lower degree, *Oxyomera* Raffray, with two species from Singapore and Sumatra. It shares notably with them the shape of the body, the very large eyes, the vertex lacking sulcus, the pronotum with a single pair of antebasal foveae, the comparatively long elytra, the elongate and impressed abdominal tergite 1, and the presence of abdominal trichomes. It may be easily separated from *Cylindroma* and *Oxyomera* by the short antennal segments 3 to 8 (moniliform in *Cylindroma* and *Oxyomera*), the club segments strongly enlarged, the vertex constricted, the pronotum lacking sulci, the foveal pattern of elytra (*Cylindroma* and *Oxyomera* have elytra each with two basal foveae, lack the subhumeral fovea and the lateral stria), and the foveal pattern of sternite 1. *Cylindroma* lacks foveae at the base of the sternite 1, *Oxyomera* has the sternite 1 with only one pair of basolateral foveae. In addition, *Oxyomera* may be easily distinguished from *Baceysus* and *Cylindroma* by the pronotum having discal and lateral spines, and the abdominal tergite 1 possessing a median ridge.

Baceysus pretiosus sp. n.

Figs 209, 210, 213 – 216

Holotype ♂: SRI LANKA: CENTRAL PROV.: Kan. Dist., 5 mls NW Mahiyangana, black light at Hasalaka Irrigation Bungalow, 30.III.-9.IV.1971, P. & J. Spangler (NMNH).

Description. Length 1.95 mm. Body moderately convex, narrow. Head with punctation very dense and mostly fairly coarse, additional, scattered fine punctures on intervals between coarse puncture. Pubescence on dorsal and ventral side very short and recumbent, postgenae with conspicuous, dense bunch of comparatively long, white setae orientated apically and curved ventrally. Head slightly longer than wide, eyes not included in width (ratio 22/20), distinctly shorter and narrower than pronotum, width with eyes about as that of pronotum. Vertex swollen medially, raised slightly above level of antennal tubercles. Vertexal foveae nude, small, with posterior margins slightly anterior to level of posterior eye margins. Frontal lobe as wide as vertex, impressed medially, with anterior margin bisinuate in dorsal view. Eyes with 20 facets. Median neck ridge not expanding on vertex. Antennal segments 3 to 6 even, each about twice as wide as long. Segments 7 hardly larger than preceding segments; segment 8 about as segment 3 to 6. Segment 9 strongly swollen, cylindrical, as long as combined length of segments 6 to 8, slightly longer than wide; segment 10 much shorter and slightly narrower than segment 9, much wider than long, segment 11 slightly longer than segments 9 and 10 combined, distinctly broader than segment 9. Pronotum 0.43 mm long, 0.40 mm wide, with base slightly broader than anterior margin. Outer antebasal foveae situated just anterior to basal third of lateral length. Punctation coarse and dense and almost even, including on lateral, inclined sides. Fine punctures on intervals absent. Base narrowly impressed, impunctate, with conspicuous, striate microsculpture reaching up to procoxal cavities; microsculptured area becoming wider on inclined sides toward procoxae. Pubescence mostly longer than that of vertex, recumbent along anterior margin, semi-erect on most of disc, almost erect and much longer on mediobasal area of disc. Elytra with basal foveae grouped two by two in common, smooth impressions extended apically to level of posterior edge of humeral protuberances. Disc slightly swollen between smooth impressions. Humeral margin oblique. Humeral protuberances distinct, with sharply defined posterior margins. Lateral sulci extended anteriorly beyond subhumeral fovea and curved dorso-apically to meet humeral protuberances, and sharply delimiting latter from outer side. Disc slightly raised along suture. Outer half of apical margins prominent and bearing large, dense trichomes. Punctation consisting of coarse and very fine punctures. Coarse punctures slightly smaller and less dense than those of pronotum, absent from inclined lateral sides. Fine punctures on intervals between coarse puncture. Pubescence mostly short and recumbent, additional long, erect setae forming longitudinal rows along suture and on elytral disc. Apical margins truncate between suture and outer half, prominent in outer half and bearing large, dense trichome; outer margins with lateral trichomes oblique. Metasternum moderately convex, with median sulcus extending from apex to mid-length. Metasternal pubescence very short and recumbent, becoming long toward outer posterior angles. Legs with dense, short pubescence, lacking longer, raised setae. Profemora straight, mesofemora and metafemora slightly curved. Abdomen with tergite 1 impressed in median

portion. Impression as wide as $3/8$ of tergite, abrupt and very deep at base, with mediobasal foveae at anterior, vertical wall. Impression becoming gradually less deep toward apical margin of tergite, ending close before apical margin. Base at both sides of impression bearing large, very compact trichome with setae orientated anterio-dorsally. Inner marginal carinae low, reaching apical forth of tergite. Punctation very fine and sparse laterally impression, extremely fine and very scattered in impression, dense and less fine near apical margin of tergite. Pubescence mostly short and recumbent, with scattered, long, erect setae and oblique to erect setae along apical margin. Tergites 2 to 4 with punctation consisting of fairly coarse and very fine punctures, larger punctures finer than those on elytra, more coarse than those on tergite 1. Pubescence on tergites 2 to 4 mostly short and recumbent, but fairly long and partly oblique along apical margins. Pubescence on mesal portions of sternites as that on metasternum. Large lateral parts of sternite 1 lacking pubescence.

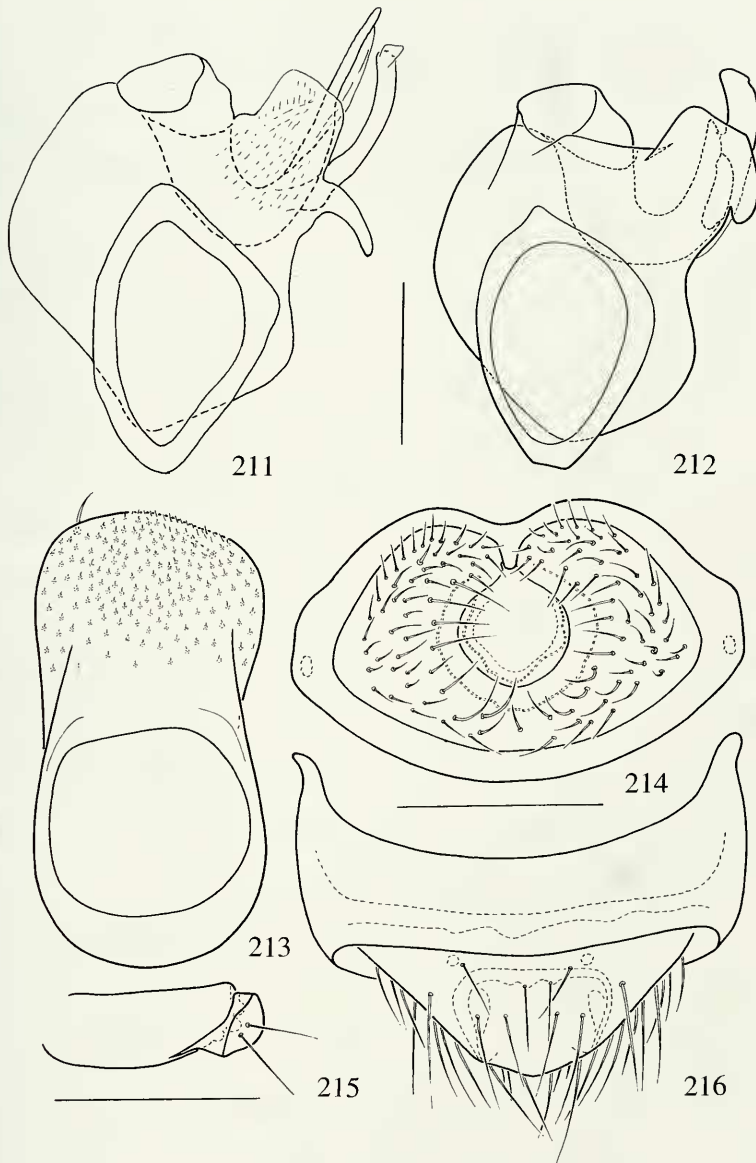
Male characters. Antennal club segments strongly enlarged. Mesocoxae with ventral margins carinate. Aedeagus (Fig. 213) wide and flat, moderately widened apically, with arcuate apical margin, single apical seta and large number micro-sensilla.

Habitat. Unknown, the examined specimen was attracted by light. The trichomes indicates myrmecophily.

Comments. *Baceysus pretiosus* is decidedly one of the more unusual pselaphines of Sri Lanka. The male secondary sexual characters, as quoted above, are hypothetical in absence of females.

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FIGS 211 to 216: *Batrisiella* Raffray and *Baceysus* gen. n.

211: *Batrisiella shinghalensis* (Raffray); aedeagus in ventral view; 212: *B. srilankana* sp. n., aedeagus in ventral view; 213: *Baceysus pretiosus* gen. n. sp. nov, aedeagus; 214 and 216: dtto, male abdominal apex, in caudal (214) and ventral (216) views; 215: dtto, 6th male abdominal sternite. Scale bars = 0.1 mm.

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